Doctorate in Clinical Psychology | Lancaster University

Doctoral Thesis

An Exploration of Transgender People's Mental Health

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Table of Word Count

Thesis Section	Text	Appendices (including tables, figures and references etc.)	Total
Abstract	288	-	288
Literature Review	7924	13621	21545
Research Paper	7751	6317	14068
Critical Appraisal	4000	635	4635
Ethics	4067	5092	9159
Totals	24030	25665	49695

Thesis Abstract

This thesis explores trans-minority mental health, and in particular the application of the Minority Stress Hypothesis (MSH) as a framework for understanding the high rates of poor mental health, suicidal ideation and suicide attempts, seen in trans populations. It is comprised of four sections.

The first section consists of a systematic literature review exploring factors which relate to suicidal ideation and attempts (SIA) in trans people. A systematic search of nine databases resulted in 27 papers. Discrimination and other negative experiences were related to increased SIA, whereas social interactions and access to support were protective, although some limitations to the study are also discussed.

The second section is an empirical cross-sectional study to test aspects of the MSH. Specifically it examines the relationship between discrimination, internalised transphobia and negative expectations with the outcomes of depression, anxiety and stress. It also explores whether functional social support moderates these relationships. The study found high rates of poor mental health among the 250 participants, which were indeed related to the three predictor variables. Multiple regression analyses demonstrated that these outcomes were predicted by discrimination and internalised transphobia, but not negative expectations. Social support did not moderate the relationships between predictors and outcomes.

The third section comprises of a critical appraisal of the thesis process and studies herein. However, a substantial focus of this concerns issues specific to research with trans populations, and limitations of the current available evidence base. The final section collates the ethical application process and study materials.

Overall, the studies reported here highlight the need for psychologists to work at structural and community levels, rather than simply at the individual level, if the mental health of these marginalised and oppressed groups is truly to improve.

Declaration

This thesis consists of academic work undertaken for the Doctorate in Clinical Psychology at Lancaster University, between June 2015 and April 2016. This is original work by the Trainee named below and has not been submitted for the purposes of any other academic award.

Jay McNeil

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Correlates Of Suicide In Trans Populations:

A Systematic Review

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Abstract

Trans people experience high rates of attempted suicide and suicidal ideation. No study to date has collated the various findings concerning correlates of trans-suicide. This systematic review aimed to summarise the available data and provide recommendations based on this evidence. Papers were included if published before February 2016, English, were peer reviewed, and presented data concerning trans people's suicide attempts or ideation. Nine databases were searched, and 27 papers were selected. Discrimination emerged as strongly related to suicidal ideation and attempts, while positive social interactions and timely access to interventions appeared protective. Limitations included differences in how papers defined trans people or measured suicide, and in their largely cross-sectional nature, making assumptions about causality in reference to lifetime ideation or attempts impossible. However, results clearly indicated a need to work at both individual and structural levels to reduce societal and service-level discrimination, enhance peer support, and ensure access to required interventions.

Keywords: transgender, suicidal ideation, suicide attempts, systematic review

Correlates Of Suicide In Trans Populations: A Systematic Review

Among trans populations suicide appears to be a particular concern. Lifetime prevalence of suicidal ideation (SI) may be as high as 84% (McNeil, Bailey, Ellis, Regan & Morton, 2012), while 35% of trans people have attempted suicide in their lifetime (e.g., del pozo de Bolger, Jones, Dunstan & Lykins, 2014), with 48% of ideators having done so (Bailey, Ellis & McNeil, 2014). Rates remain high when measured over the preceding year (e.g., Bauer, Pyne, Francino & Hammond, 2013). Rates of SI and suicide attempts (SA) are higher than the general population (e.g., 9.2%, Nock et al., 2008, and 5%, International Association for Suicide Prevention, 2012, respectively) and those of other social minority groups. For example, when compared to lesbian, gay and bisexual (LGB) people, trans people were "162% more likely to have ever seriously considered committing suicide " (p. 1181), with other research finding that lifetime suicide rates for LGB people were only twice that of heterosexual people (King et al., 2008).

Although hard to establish among trans people, suicidal ideation and attempts (SIA) are related to completed suicide in the general population, although the relationship is complex in relation to contributing factors and the timeline between ideation onset and attempts (Nock et al., 2008). Similarly, in reviewing risk factors for suicide, Mościcki, (2001) highlighted how having a history of SA was a substantial risk factor for later completed suicide. However, rates of completed suicide are difficult to ascertain among trans populations. This may partly be due to an unwillingness from coroners to record a persons' trans status on a death certificate, meaning suicide data where the person's death cannot be aligned to their medical records may underreport trans suicides (Bauer, Scheim, Pyne, Travers & Hammond, 2015), although that would still only capture those who received medical interventions. Scarce available data may also relate to the limited trans populations traditionally studied (Haas et al., 2010). Due to difficulties gathering this information in trans

populations the focus of this paper is SIA, however based on the research above it may be assumed that the high levels of these seen in trans people may indicate high levels of completed suicide, as suggested by Bailey et al., (2014).

A number of theories concerning increased suicidality in minority groups are applicable to trans people. Snowden (2003) highlighted how racial and ethnic differences may impact on the mental health-care people receive. Similarly the discriminatory experiences trans people face in accessing healthcare (Ellis, Bailey & McNeil, 2014) may prevent them obtaining timely support thus contributing to worsening mental health issues.

Alternatively, social capital theories, or "the existence of voluntary community networks and relationships based on trust, and the use of these networks and relationships to enable positive social action" (p. 971, Kelly, Davoren, Mhaoláin, Breen & Casey, 2009) refer to processes which lead to social cohesion (McKenzie, Whitley & Weigh, 2002). This includes multiple structural and cognitive processes, some of which have related to levels of psychological wellbeing in different contexts (e.g., Kunst, van Hooijdonk, Droomers & Mackenbach, 2013; Yiengprugsawan et al., 2011). For trans people, facing exclusion from social institutions and social support could decrease social capital and thus affect wellbeing.

More specifically, racial 'microaggressions' or "brief and commonplace daily verbal, behavioural, or environmental indignities, whether intentional or unintentional, that communicate hostile, derogatory, or negative racial slights and insults" (p. 271, Sue et al., 2007) have been suggested as having a cumulative impact which leads to poor wellbeing for those who face such discrimination (e.g., Wang, Leu & Shoda, 2011). Subsequently the theory has highlighted the negative impact of such experiences on mental health among people in various minority groups, including those who are LGB (e.g., Nadal et al., 2011, Shelton & Delgado-Romero, 2011) and trans (Nadal, 2013).

Meyers' (2003) Minority Stress Hypothesis (MSH) offers a more complex explanation for poor mental health in minority groups, which encompasses issues of social capital and microaggressions in its dividing of minority stressors in to proximal and distal factors. In relation to suicide, minority populations experience the same risk factors as majority group members (e.g., low income, not being married; Nock et al., 2008); however they are also subject to additional stressors specific to their minority experience, which has an additive negative effect on mental health. Testa, Habarth, Peta, Balsam and Bockting (2015) adapted the model for use with trans and gender nonconforming people. They highlighted that trans-specific distal (external) factors would include gender-related discrimination, rejection and victimisation, and non-affirmation of someone's gender identity. Proximal (or internal) factors might include internalised transphobia, negative expectations, or concealment. The authors finally highlighted resilience or protective factors, including community connectedness and pride. Thus the factors identified by Meyer (2003) have been easily adapted for trans populations.

Given the high rates of SIA among trans people, it is important to understand the factors contributing to this, and theories such as MSH offer a way of understanding how these factors may lead to such an outcome. Although research has explored trans people's suicidality, and a review exists which explores prevalence rates of SIA in these populations (Marshall, Claes, Bouman, Witcomb & Arcelus, 2016), no systematic reviews have focussed on collating the current evidence concerning correlates of these. Therefore, this review aims to summarise the evidence concerning factors which correlate with SIA in trans populations. A systematic review was conducted instead of other methods to facilitate a comprehensive understanding of the broad range of issues affecting trans populations, and due to the heterogeneity of data collection methods and findings reported across relevant studies. The review also aims to provide recommendations for enhancing the future evidence-base for

supporting trans mental health. The review was conducted in accordance with PRISMA guidelines where applicable (Moher, Liberati, Tetzlaff & Altman, 2009).

Method

Inclusion and Exclusion Criteria

Studies included in this review were published in English in peer reviewed journals, which included quantitative data about factors relating to suicidal ideation and/or attempts in trans people. Studies were excluded if they were qualitative or if they aggregated data about trans people with other populations (e.g., combining trans and LGB people's data).

Search Strategy

Initially in July 2015, and again in February 2016, a literature search was conducted using databases selected for their relevance to the topic. These were AHMED, Academic Search Complete, CINAHL, PsyInfo, PsyArticles, Web of Science, Scopus, OVID-EMBASE and Pubmed.

A number of search terms were used to refer to trans people, combined via the operator 'OR', and these can be found in McNeil et al. (2012; reproduced in Appendix A). In that study, gender-related options were collated by an advisory panel which included representation from different cultural trans communities, including researchers and clinicians with extensive theoretical and/or practical experience. Searches were conducted using free text terms rather than MeSH headings, as these headings did not return a sufficiently wide variety of the different terms that may be used to represent trans people. The strategy was informed by recommendations from a subject librarian concerning systematic literature searching.

A number of search terms were used for suicide (Appendix A), which were separated by the operator 'OR'. The trans and suicide related search terms were then conjoined using the 'AND' operator. Where it was possible, search terms were exploded, and were unrestricted.

Selection

The process of screening the papers is demonstrated in Figure 1. Initial searches returned 2465 papers. Papers were screened by title, then abstract, leaving only 76 papers after duplicates were removed. Finally, full-text screening resulted in 27 papers, with no further papers matching all the criteria being identified from their references.

Insert Figure 1 here

The papers identified during full-text screening were excluded if: they replicated data from the same sample as another included study (e.g. Testa, Limenez & Rankin, 2014); they were conference abstracts; or the measures of SIA were unclear.

Included papers have been allocated numbers and are referred to by these in the text (see Table 1).

Insert Table 1 here

Quality Appraisal

The quality of reporting of the selected studies was established using the STROBE checklist (Strengthening The Reporting of Observational Studies in Epidemiology criteria;

Vandenbroucke et al., 2007; see Appendix B), and the percentage of the relevant criteria met for each paper was calculated.

Results

In total 27 studies met the inclusion criteria, providing novel data concerning correlates of SIA amongst trans people. Relevant and key characteristics of the studies are presented in Table 2, and a brief quality appraisal in Table 3. Table 2 highlights the participant numbers completing relevant measures in preference to overall study sample size, design factors relevant to this paper, and summary details of the analyses conducted including principal outcome measures.

Different papers referred to trans individuals in different ways (e.g. trans men are referred to as natal females, female-to-males, women, transsexuals). In describing the results of individual studies it is often necessary to use the terminology that has been used in the papers cited to give context to how participants may have been interpreted by the researchers. However this terminology may differ from the preferred approach of the authors of this paper which would always be to refer to an individual using the gender that they identify as.

Insert Table 2 here

Quality appraisal and description

The percentages of STROBE criteria met by each paper are highlighted in Table 3. As can be seen from these scores the quality of reporting among the papers varied considerably from a low of 18% (27) to 76% (1) evidencing the highest quality reporting.

Insert Table 3 here

Most papers scored highly for study design, methodology, and conclusions. Criteria which few met broadly related to how data were treated and analysed, and the provision of sufficient detail at each stage.

Table 4 highlights key findings from each study in addition to important limitations. Methodological issues were prevalent, concerning for example, the reporting of insufficient information (4, 6, 23, 25 and 26), or of enough detail of consent seeking processes (especially prominent in data from gender clinics, where seven papers originated: 3, 7, 8, 9, 12, 23 and 24). Data were recorded from 1997 (2) to 2013 (14) however publication dates were often later, and participants' experiences may vary substantially as a consequence of changing legal and social structures. For three papers, it was unclear when data collection occurred (4, 19 and 23). The majority of studies were conducted in North America, however others were located in Asia (e.g., 24), South America (12 and 14) and Europe (e.g., 23: Table 1).

Insert Table 4 here

Details of the measures relating to suicide data are available in Table 4. Table 5 highlights the exact suicide-related topic studied in each paper. For three papers stating that they reported data on SI and SA, the method of seeking attempt data conflated it with other constructs so only ideation-related data is included here. For example, Papers 9 and 24 both asked participants whether they had ever mutilated themselves *including* suicide attempts, and reported that this question represented SA. In the case of Paper 23, data were gathered from secondary sources, whereas for all other studies it was obtained from participants.

Insert Table 5 here

Only seven studies explicitly involved trans people, either in data collection as interviewers (14, 18 and 20), or in multiple stages of the study (6, 11 and 19), with only one paper explicitly including trans people as part of the research team (1).

The demographic details reported varied substantially across studies. Age and some form of gender variable were provided by all papers. Given the importance and possible confounding nature of ethnicity or race, and of sexual orientation, it is surprising that many papers omitted these variables.

A key demographic for this study relates to gender. The papers again varied in how they conceptualised their populations, with some representing only those who met diagnostic criteria for gender identity disorder (e.g., 7, 8 and 12), and others allowing people to self-define their gender (e.g., 13 and 18). The definitions that participants could ascribe to were sometimes unclear, however where stated, they differed between studies. For example Paper 5 defined trans people as those "having lived or wanting to live full-time in a gender opposite their birth or physical sex; having or wanting to physically modify their body to match who they feel they really are inside; or having or wanting to wear the clothing of the opposite sex, in order to express an inner, cross-gender identity" (p.470). Alternatively, Paper 19 defined trans women as assigned "'male' at birth with a later conception of one's self as not 'completely male' in all situations or roles" (p. 14). For some papers it was unclear how their population was defined, or how participants were identified as trans (e.g., 16). One paper focused solely on trans men (16) and four papers on trans women (18, 19, 20 and 26). Sample sizes for individual studies varied from fewer than 100 to over 4000 (17).

In terms of data handling, only three papers gave explicit details concerning missing data and how this was managed (1, 15 and 16). Most papers reported descriptive statistics however not all of these provided sufficient details.

Given the heterogeneity between papers in important factors (e.g., how the participants are defined, their country or culture of origin, the variables reported, and how SIA are measured), drawing conclusions across these studies is difficult. It is important to keep this in mind when considering the findings related to suicide below.

Prevalence

Prevalence rates amongst all studies varied, however rates remained higher than for the general population, consistent with other studies. In the 14 papers that reported SI, rates ranged from 37% (15) to 83% (25). Rates of SA varied widely, ranging from 9.8% (8) in a mixed trans group to 43% among trans men only (16), and 44% in a mixed sample (17). It is worth noting that the range reported in gender clinics varied from 9.8% (8) to 21.2% (3), whereas for others it was 11.2% (1) to 44% (17). The highest rate from a gender clinic was recorded using a self-report questionnaire (3), as opposed to being gathered through interviews with clinicians directly determining care, which appeared to be the case for the other clinic papers. SA may be under-reported in gender clinics as individuals are often aware that it may preclude access to medical transition interventions (Ellis et al., 2014).

Correlates of Suicidal Ideation and Attempts

Demographic variables.

Insert Table 6 here

A number of demographic variables were associated with higher rates of SA, such as having a history of incarceration (2), and lower socio-economic status (e.g., 5), whilst being in stable housing significantly decreased the odds of a lifetime SA (14). Household income (21), relationship status (13), sexual orientation (2) and location (e.g., urban vs. rural area; 5, 14 and 21) were unrelated to SA. Variables unrelated to SI included religion (1) and relationship status (24). For other demographic variables however, relationships appeared mixed or contradictory and will thus be considered in more detail; these included gender, assigned sex, educational attainment, employment, age and ethnicity.

The relationship between SIA and gender was complex. Paper 10 reported that trans people and cis[1] women had higher rates of lifetime SA than cis men, and suggested that as most of their trans sample were women (82.3%), findings may reflect an effect of identifying as female over identifying as male. Similarly Paper 15 found that SI in trans people (although again greater than for cis people) was not different to psychosocially matched cis women or cis lesbians. Furthermore, Papers 5 and 13 found that trans men were more likely to attempt suicide than others (with Paper 21 highlighting decreased odds for trans women than for trans men). However, other studies found no differences between different gender identities in terms of ideation (9 and 7) or attempts (2, 13 and 14), and Paper 11 found trans women were more at risk of SA. There are important differences between the studies in terms of how participants were defined, where and how data were collected and gathered, and in the sizes of different trans populations included, and issues with comparing disaggregated cis people to mixed trans groups. Thus although trans people consistently had higher rates of SIA than cis people as a group, this relationship was not simple, and variations existed in sub-populations of each group.

Being assigned female rather than male at birth related to higher levels of SI (27), and SA (5 and 13). However in Paper 23 sex assigned at birth in general was not related to SA.

These data were from clinc records rather than from participants, which may have affected the results. Furthermore, their population was children and young people, who may not have made as many attempts as adults. If being female assigned at birth relates to SIA, this may relate to the findings above, perhaps implying that others' perceptions of gender (regardless of an individual's identity) may lead to distressing experiences. However there are differences in the assigned sex composition of the samples in these papers which make it hard to draw conclusions.

Educational status appeared unrelated to SI (2) or SA (2 and 14), however Paper 21 did find that greater educational attainment related to decreased odds of lifetime SA. This may be an artefact of differences in the way educational attainment was coded, and further exploration would be useful.

Paper 2 found that unemployment related to greater risk of SA, however Papers 14 and 24 found that it was not related to SA or SI respectively. As such the relationship between unemployment and suicide is unclear.

Age was another complex factor. In terms of SA, Papers 14 and 21 found no relationship with age, whereas Papers 5, 13, and 19 all found that younger age related to an increase in risk of SA. However this relationship was not apparent for SI. Paper 24 found that ideation was related to younger age among trans women, but age was unrelated in trans men. This may be at least partly explained by the results of Paper 27 which demonstrated that SI was very high among those who were 13-19, then decreased substantially until around the age of 30, when it increased again. In Paper 24's sample, 58% of the trans women were over 30 compared to 26% of the trans men. Furthermore only 26% of the trans women were under 24, whereas 42% of the trans men were under 24. Across all papers, the age profiles of

participants differed, which may have contributed to the differences in findings, given that the relationship between age and SIA does not appear to be linear.

The relationship between SI and ethnicity or race was relatively straightforward. Being White related to the highest levels of SI (11 and 18) with African Americans being significantly less likely than others to disclose ideation (27). For SA the evidence was conflicted, with one study finding an increase related to being White (2), compared to others finding multiracial and 'other' groups, or those who were ‘non-White’, reporting higher rates of SA than White people (5 and 21). Furthermore Papers 13 and 18 found no relationship between ethnicity and SA, and the relationship highlighted in Paper 21 for lifetime attempts was not present for attempts within the past 12 months. There may be differences between the samples which could affect these findings. For example, having a larger White cohort in one study (5) may have influenced the outcomes when compared to a study with a smaller White group and greater representation of people from other races (2). However, one study that found no relationship between ethnicity and SA utilised a sample that was almost exclusively Caucasian (Paper 13; 97% Caucasian).

Mental health related variables.

Insert Table 7 here

Increased risks for ideation were seen in those who had a history of abuse (6), and in people with past or current use of either psychotherapy or medication (15). SA was related to having a history of drug or alcohol treatment (2) and to psychiatric hospitalisation even when demographic factors had been accounted for (13), although a history of hospitalisation only predicted variance in attempts once victimisation-related variables were accounted for in the model. Higher rates of SA were evident in people with a diagnosis of dissociative identity

disorder (3) and in those with low self-esteem (2). No relationship was found between impulse control difficulties and either SIA (15), or having a diagnosed disorder (from Axis II of the Diagnostic and Statistical Manual, 4th edition; American Psychiatric Association, 2000) and suicide risk (7). Depression was related to increased SI (18) and SA (2). Help-seeking for distress was increased in those who were experiencing SI, however there were no differences between those seeking help for distress and those not treatment-seeking in terms of SA (4). Paper 9 found that psychiatric comorbidity was related to increased ideation in trans men, but not in trans women, however the sample comprised of a substantially larger group of trans men than trans women.

Trans Related Variables.

Insert Table 8 here

Many of the variables studied related to experiences that people had as a direct consequence of being trans. Suicide-negativity (an index formed of questions relating to suicidal thoughts or feelings in relation to being LGBT; Paper 6) was associated with higher rates of SI. Conformity with behaviours consistent with those expected based on the sex someone was assigned at birth (6), and age of onset of 'gender dysphoria' (7), were not associated with SIA.

Positive social interactions.

There was a complicated relationship between SIA and social support, which was mainly explored in Paper 1. Having high levels of support versus low levels of support was strongly related to decreased SIA. When explored in more detail, there was no relationship between social support from people who were not the participants' parents and SI; however

support from parents was related to decreased ideation. Unexpectedly, the authors found a positive relationship between higher levels of social support from leaders (e.g., employers or teachers) and increased SA, which they suggest may be due to attempts instigating increased support from those around the person, rather than causing it.

Transition.

Paper 1 demonstrated no relationship between undergoing some form of social transition and SI. They did however find that having changed identity documents to match the gender someone identified as did relate to decreased SIA. When transition was defined as "living full-time in your gender of choice" (p. 271, Paper 22), those planning to transition, or who had already transitioned had elevated odds of reporting SI compared to those who had no intention of transitioning. There was however a significant interaction between stage of transition and experiences of discrimination, whereby the greatest odds of reporting lifetime ideation resulted from planning to or having undergone transition, and experiencing discrimination, while the lowest odds were among those who did not plan to transition and who did not experience discrimination.

Medical transition was similarly complex. Accessing transition-related medical care (or not) did not appear to relate to SA among trans women (26). Paper 8 also reported that in those who attended a gender clinic and underwent a medical transition, lifetime SA was not affected. However this may be because lifetime rates are historical and cannot decrease. That they did not increase suggests that the interventions may have had an impact. However, one person did complete suicide during the pre- and post-intervention measurements, which was not explored by the authors as their data were excluded. It is important that findings from the gender clinics are considered with reference to their context as mediating access to medical interventions (see discussion). In contrast however Paper 1 reported less SI for those

undergoing a medical transition compared to those who were considering it. They further found that among those who were contemplating suicide, rates of SA increased during transition compared to other stages. There are differences in how medical transition was defined within these papers which may account for some of this discrepancy; however the samples were drawn from different populations (in terms of country location, as well as community vs. clinic) which may also limit their comparison. Finally, being in a later stage of therapy (referring to an individual's medical process of transition) when presenting for an initial appointment at a gender clinic was related to increased SI among trans women, but not trans men (24).

In terms of the specific medical interventions that people might undergo, Paper 16 found a small but non-significant decrease in lifetime prevalence of SA between a group of trans men who were taking hormones compared to those who were not. Paper 26 found that hormones related to a significantly lower rate of SI in trans women receiving them, compared to those who were not. Overall Paper 1 reported that receiving hormones was associated with decreased SI in a mixed group compared to those who had not started hormone therapy. Paper 26 also studied breast augmentation among trans women and found that it related to lower levels of ideation in those who had undergone the procedure compared to those who had not, whereas whether genital surgery had been undertaken or not was unrelated to SA.

Negative interpersonal experiences.

Insert Table 9 here

In general, experiencing lower levels of internalised transphobia related to lower levels of ideation (1) and attempts (1, 14 and 21; although for paper 21 the relationship between internalised transphobia and SA became non-significant when referring to attempts

within the past 12 months). Experiences of gender-related discrimination related to increased odds of SI (Paper 22, although there was an interaction with transition as discussed above) and SA (2 and 17). Lower levels of external transphobia related to lower levels of SIA (1), while experiencing verbal victimisation (2) and gender-based victimisation in school (6) all related to an increased risk of SA. For example, discrimination from healthcare staff and from the police related to increased odds of a lifetime attempt, although this did not hold when part of a multivariate model where internalised stigma remained significant (14). Structural stigma (e.g., an environment with non-equal legislation for trans people) was also related to increased odds of lifetime attempts, however not to attempts within the past 12 months.

Interestingly, being seen as gender nonconforming significantly related to increased odds of lifetime SA, even when other variables were accounted for. However this relationship was not present when transphobic discrimination was incorporated into the model. Thus transphobic discrimination at least partly mediated the relationship between gender nonconformity and lifetime SA (17).

Being victimised verbally (2), subject to sexual violence (2 and 25), or physical violence (2, 13 and 25) also related to an increased risk of SA. However Paper 25 found that the relationship between violence and identity may be more nuanced for suicidal ideation. Specifically, that for trans women physical violence related to increased ideation whereas sexual violence did not; while for trans men the converse was true with sexual violence relating to increased ideation and there being no relationship with physical violence. Having experienced physical *or* sexual violence related to SI in Paper 22, with experiences of both associated with the highest odds of reporting ideation.

Individual Variables.

Insert Table 10 here

Relatively few general intrapersonal variables, unrelated to transition or mental health, were explored in the literature available. Low satisfaction with weight, and negative perceptions of others' feelings about one's body were associated with greater SI, whereas satisfaction with appearance in general was not (6). In relation to sexual health risk-taking, while unprotected receptive anal intercourse was associated with greater risk of SA, sex under the influence of substances, and illicit substance use in general were not (20). HIV status in trans women was unrelated to SA (2), whereas being HIV positive did relate to increased odds of lifetime SA in a mixed trans group, although this relationship did not hold when part of a multivariate model incorporating internalised stigma, which remained positive (14). A history of sex work was unrelated to SA (14).

Discussion

A number of variables associated with SIA were identified in the available literature. Relevant demographic variables differed for trans people compared to the general population. For example, unexpectedly no relationship was found for SI with religion, which may reflect discrimination in faith communities and resulting exclusion from the potential benefits (e.g., Dervic et al., 2004), or between SI and relationship status (e.g., Nock et al., 2008). Lower levels of education relate to suicide in other groups (e.g., Lorant, Kunst, Huisman, Costa & Mackenbach, 2005; Nock et al., 2008) however did not relate to ideation and showed a variable relationship with attempts in trans populations. Similarly, in the general population being unemployed confers greater risk of suicide mortality (Yur'yev, Värnik, Värnik, Sisask & Leppik, 2012), whilst across Europe lower socio-economic status is associated with higher suicide risk (Lorant et al., 2005) which was found in these studies. However income was unrelated to SA, suggesting that the inequality of lower status rather than absolute income

may be the relevant factor for SA. Sexual orientation was unrelated to SA here, although these have often been linked in other groups (e.g., Smith & Stewart, 2012). Potentially, transphobic and homophobic experiences have similar origins and impact (e.g., Norton, 1997), rather than additive effects.

In relation to gender, trans men and trans women were found to differ, although these findings were at times contradictory. Similarly, sex assigned at birth had a variable relationship which may reflect fluctuations across identities. This may relate to the finding that being trans is a risk factor for SI when compared to cis people generally, but not when compared to cis women (15). The authors state that this potentially reflects how trans people's experiences may be a conflation of transphobia or cissexism, and also sexism more generally. That people who may be either perceived as, or who identified as women might be at greater risk reflects global findings of higher suicide rates among women (Nock et al., 2008), although in trans people additional exploration is required as the relationship was not consistently evidenced. Furthermore, there may be an interrelationship of age of participants with identity. For example, in whole group studies, being of younger age was related to SIA, which reflects global findings (e.g., Nock et al., 2008), however age was not related to ideation in trans men. This requires further study, especially as the relationship between age and SIA was non-linear.

A final demographic variable for which the findings appeared initially conflicting was ethnicity. In relation to SA, the findings appeared contradictory (see results section), which speaks to the subtle and nuanced relationships between ethnicity and suicide seen in other research (see Leong & Leach, 2007). In some cases being part of particular ethnic groups related to a reduction in SIA, whereas in others it bore no relationship to SA (with ideation being unevaluated). The variation among the ethnicity and race of participants across studies

make it hard to form conclusions, with the only firm outcome being that ethnicity has an impact which warrants further exploration.

In relation to mental health, high rates of psychiatric diagnoses are associated with increased suicide risk in many populations (e.g. Qin, Agerbo & Mortensen, 2003), including mixed LGBT groups (Irwin et al., 2014). Mental health related factors showed similar relationships here. For example hospitalisation is a significant suicide risk factor in the general population (Bostwick & Pankratz, 2000), and was also a risk factor for SA here. However current comorbidity was not related to SI in trans women which indicates a potential effect of gender. This interaction with gender is not unexpected, although its direction may be. It may represent difficulties with the origin of the data (a gender clinic); however it may reflect a difference between trans men and women. Qin et al., (2003) demonstrated that while psychiatric comorbidity was related to suicide, the risk was greater for women. Given that within this population, some of the differential impact of gender may be due to identity and some due to how one is treated based on perceived gender, this requires further exploration.

The complex, and sometimes contradictory findings concerning demographic and mental health variables in these studies, suggests that their relationships with SIA in trans communities are either different, or more complex, among trans people than in many other groups. This may be because, as the minority stress hypothesis suggests, of the additional pressures facing trans people conferred by virtue of their gender minority status. The remaining variables identified here relate to trans- or minority-specific experiences and are thus considered in light of their fit with or relevance to minority stress models, in particular the concepts of distal and proximal stressors, and protective factors.

In-line with the MSH these findings highlighted that discrimination and violence were consistently related to SIA in trans populations. Paper 2 noted that many variables relating to suicide were similar as for those with LGB people, "societal risk factors such as [trans-related] gender-based discrimination and victimization are independently associated with attempted suicide" (p. 63). Furthermore, discrimination accounted for the relationship found between being perceived as trans and SA, and was a factor in the relationship between SI and transition status (as discussed below). The relationship between discrimination and negative outcomes was present at the individual level (e.g., through interpersonal victimisation) and at the structural environmental level (e.g., through policy and legislation). However as with other variables, gender differences did emerge with physical and sexual trans-related violence having different impacts for trans men and trans women. Gender, different types of violence and their relationships with SA have been studied in cis populations, again highlighting variable findings and a need for further research to understand the complex interplay between different factors (e.g., Devries et al., 2011; Tomasula, Anderson, Littleton & Riley-Tillman, 2012; Lowry, Crosby, Drener & Kann, 2014; Bryan, McNaugton-Cassill, Osman & Hernandez, 2013).

Testa et al., (2015) highlighted how distal variables, such as discrimination, may involve different stressors for trans people when compared to LGB people. For example, difficulties accessing legal recognition documents, accessing gender appropriate medical care, or being unsafe in gendered spaces. They further posited an additional variable of ‘non-affirmation’ of identity. In relation to these factors, supporting people to live in a manner consistent with their gender, or affirming their identities legally through the provision of documentation or access to needed interventions, tended to relate to decreased SIA. However it may be that people who were less distressed were more able to facilitate the changes they wished to make, thus causality needs to be established. Some aspects of physical transition

were more complex, for example where being in the process of transition was related to attempts. The variation in specific types of interventions that are either protective or non-related may be a reflection of those that help the person interact in the world on a daily basis as the gender they are, compared to those that are more about internal consistency (thus the difference between the impact of hormones vs. genital surgery). Paper 22 demonstrated that undergoing or having undergone transition related to greater risks of lifetime ideation than for those not wanting to undergo transition. The authors suggested that their finding of an interaction between transition and discrimination may imply that transition confers a vulnerability to increased discrimination, thus explaining this interaction. Similarly Paper 1 suggested that although transition ultimately reduced risk, while undergoing it participants may face significant challenges which could add to their overall stress burden. This is commensurate with other research (Bailey et al., 2014) which showed that while having undergone transition, and indeed being in the process of transition reflected a lower risk than being prevented from transitioning, those undergoing the process faced specific difficulties which were related to SIA.

Protective factors in the minority stress model largely relate to feeling connected to, and part of a community, having social support, and a sense 'identity pride'. Here, identity-development related factors were unrelated to suicide (e.g., childhood gender conformity), although knowing people who were trans when first identifying as such seemed to be of some benefit, possibly through providing a positive concept of trans identities. Furthermore, having high levels of social support generally, and in particular parental social support, were protective in terms of suicide risk. This finding echoes other research with trans populations which found that rejection from family and peers increased the risk of SA (Haas, Rodgers & Herman, 2014), and findings from studies with many other marginalised populations (e.g. Compton, Thompson & Kaslow, 2005; Farrell, Bolland & Cockerham, 2015).

Finally, a number of additional individual variables were explored which may be indirectly related to minority stress. The finding that dissatisfaction with weight was associated with SI may be demonstrative of the potential impact of obesity on SIA in the general population; however an increase in risk has only been demonstrated among women (Klinitzke, Steinig, Bluher, Kersting & Wagner, 2013). The relationship between HIV status and suicide was unclear, requiring further study. As other studies have demonstrated, some risk taking in relation to sexual health has been frequently related to increased suicidal behaviours (e.g., Husky, Guignard, Beck & Michel, 2013). However some forms of risky behaviour, such as sex under the influence of substances, did not show the expected positive result. Furthermore, illicit substance use in general was not related to SA, unlike in the general population (Wong, Zhou, Goebert & Hishinuma, 2013; Rasic, Weerasinghe, Asbridge & Langille, 2013). This may be due to differences in the type or severity of substance use, which could be further studied. Some of these factors may be related to the impact of minority stress, through mechanisms such as reduced social capital, depression or low self-esteem. Indeed sexual risk taking has been explored as a correlate of minority stress in other groups (Testa et al., 2015). Thus the wider ranging implications of these stressors need exploring to understand these findings and their interrelationships.

To summarise, distal stressors and social support have been studied in relation to SIA among trans groups, and the findings so far are highly consistent with those suggested by minority stress theory. Further research would be useful to explore the other minority stress factors, such as proximal factors (e.g., internalised transphobia, concealment), or protective factors such as identity pride, to explore whether the other model variables can support a cohesive understanding of risk for suicide among trans people. That a substantial number of trans-specific and gender-based victimisation variables related to SIA (as protective and risk factors) demonstrates the added complexity of suicide risk in trans people over and above that

experienced by the general population. While the MSH may provide a useful explanation, mechanisms involved in other suicide models such as Interpersonal Psychological Theory or the Clinical Model (see Ploderl et al., 2014, for further details) may help to understand non-minority specific factors, although it is apparent that this needs to occur in the context of the added complexity of these additional variables. Qualitative information would be of use to help provide meaning derived from the participants' lived experiences to contextualise these findings further. For example, Moody, Fuks, Peláez and Smith (2015), using qualitative methodology, demonstrated the importance of social support, gender identity and transition-related factors. However they also found that additional factors such as reasons for living and other individual differences which have been explored in non-minority-specific models were also relevant. Thus a complete model of trans suicide may need to incorporate a merger of trans-specific minority stress models and general suicide models. For example Bauer et al (1) conceptualised a model of intervenable factors in trans suicide which combined minority specific factors with Joiner's Interpersonal Theory of Suicide (Van Orden et al., 2010).

Limitations

There were a number of important limitations to this study. Primarily, the papers varied in their populations and cultural contexts, gathering data from different locations and using different measures. For example, studies frequently used a mixture of validated (although it was not clear whether these had been validated for trans people) and researcher-designed measures. Data collection varied from interviewer delivered surveys, to computer based delivery, and clinical diagnostic assessments. All these factors make it difficult to draw firm, generalised conclusions.

The papers herein focussed on SIA; however it would be essential to gather reliable data concerning completed suicides as those who complete may have experienced different

risks or events to those who made attempts (e.g., Poorolajal, Rostami, Mahjub & Esmailnasab, 2015; Uribe et al., 2013). They also tended to categorise people as binary-gender-identified regardless of identity, while reporting their findings as relating to all trans people. This has resulted in a review which, by following the research, failed to explore the needs of non-binary people. Further research must represent the true spectrum of trans people's experiences and identities which far exceed a binary approach.

In terms of the review methodology, only English language papers were included, and within the studies there was a bias towards English-speaking participants and locations. These issues may have impacted upon the data, for example, Hjelmeland (2011) emphasised the need to take culture into account within suicide research. There are also legal and social differences in how trans people are viewed and treated (socially and medically) between different locations, which make it difficult to draw comparisons. Ideally future research should involve liaison and joint working with trans organisations from a range of locations and countries, to explore the cultural meanings of trans-people's experiences.

There were a number of important ethical considerations in reviewing this literature. A significant issue related to research from gender clinics which tended to focus on a particular, and potentially unrepresentative, group of trans people. There are also issues in terms of power where clinicians who have control over transition-related interventions are those asking participants to take part in a study. Relatedly, clinics are often in a position to apply for and receive research funding, whereas trans groups may not be. This further skews the available data and such research may miss important nuances. Finally, an important consideration in light of the studies herein relates to cisnormativity (the tendency to assume that being cisgender is normative, and being transgender is therefore abnormal). Many papers referred to trans people by their assigned gender, which is disrespectful of the individuals the authors purported to be concerned with. Trans people were also compared to 'men' and

'women' rather than cis men or cis women, making their identities as men, women or other non-binary identities 'other' to the 'norm'. Othering constitutes a microaggression, which ironically forms part of the complex interaction of factors contributing to poor mental health in trans people (e.g., Nadal, 2013). Thus it would seem particularly relevant that this process was reflected within many of these studies.

Future Directions

In addition to the suggestions already highlighted, essential to future research in this field is the active inclusion of trans people in this process (see the PULSE project for an excellent example: http://transpulseproject.ca/). Community members have a role here too in engaging with suicide research, as an area that is demonstrably valuable and which can enhance community resilience and support its members to survive. Another key consideration for future research is the avoidance of aggregating all trans people together, given the substantial and complex gender differences apparent in the papers here. It is also important to adequately include those with non-binary gender identities. In these papers they were either omitted or aggregated with others, whereas unpicking that data could have been achieved by, in most cases, asking more subtle questions concerning gender. This omission negates their unique experiences and the contribution living as non-binary may make towards well-being. Furthermore, an understanding of completed suicides in trans people is essential, as is a thorough exploration of the complex interrelationships between variables, especially those that relate to intersectional issues. Similarly there may be differences between types or severity of SA which requires exploring, for example by using more in-depth questioning than the dichotomous measures most frequently employed here. Using mixed methods may also be essential to fully explore suicidal phenomena taking in to account context and meaning (Kral, Links & Bergmans, 2012). Finally, researchers need to ensure that their

findings are shared with trans communities in ways that are accessible, for it to be truly meaningful and useful to those who are being researched.

For future policy development, it is clear that lived experiences of discrimination and victimisation have a substantial and devastating impact on trans people's lives. Supported by minority stress theory, there are many areas where policy must be amended to improve inclusion and reduce discrimination of trans people. In particular, health policy needs reviewing, to enable trans people to more readily self-identify and access the support that they need, as it is clear that withholding this has negative and harmful effects, even relating to suicide (see McNeil et al., 2012; Bailey et al., 2014). This is important for commissioners, who also need to consider wider sources of research (for example, research coming from the trans communities themselves) to avoid only being exposed to one dominant perspective which does not necessarily reflect the identities and realities of those for whom they may commission services. This review clearly highlights the benefits of timely interventions in the context of reducing distal stressors.

For clinicians and psychologists these findings highlight the importance of working to challenge the discrimination which so evidently impacts upon trans people's lives. Thus we may consider moving beyond one-to-one work and therapeutic interventions which locate difficulties within the individual, to also working creatively in fostering social support, and in tackling the social causes of these disparities which lie almost exclusively outwith trans community members. We also have an ethical duty to challenge practice which may cause harm, such as delaying access to interventions to support gender affirmation, and to ensure our practice does not inadvertently recreate the minority stressors experienced by trans clients in other settings (e.g., British Psychological Society, 2012).

Conclusions

As with other minority groups, the factors that relate to SIA in trans people include those that are highly specific. Therefore a complete understanding cannot be extrapolated from literature with other groups (e.g., LGB people). Given the high rates of SIA experienced by many trans people, further research is required to understand how they may be better supported. Future models may need to incorporate minority-specific and general theories of suicide. Interventions will require both individual and structural processes to address the distal and proximal additional causes of stress faced by trans people.

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Footnotes

[1]cis refers to people whose gender identity is the same as the sex they were assigned at birth.

Tables and Figures

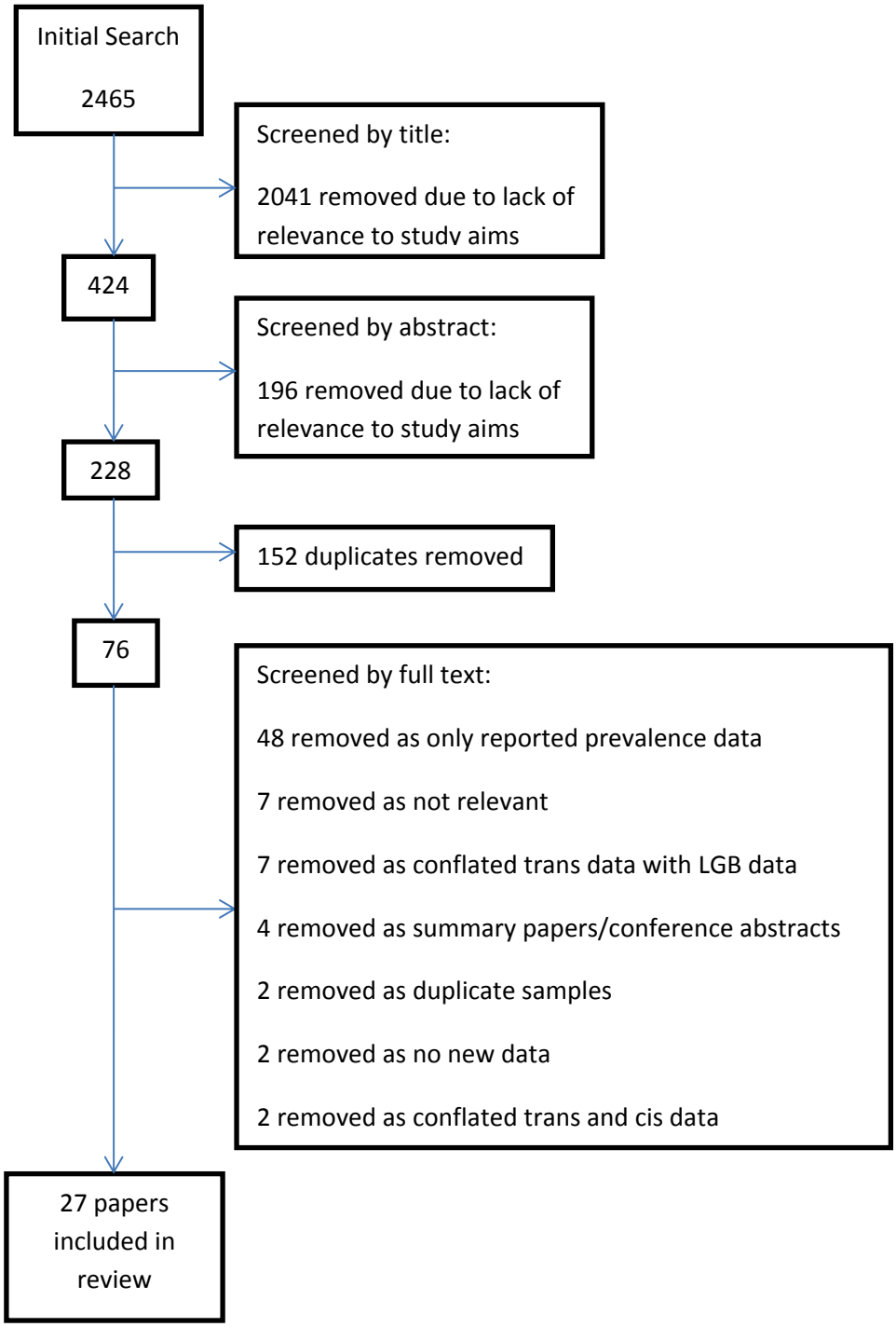

Figure 1. Flow diagram of paper selection

Table 1

Study relevance (presented by publication year and location)

Paper	Author	Data collection location	Relevance of study aims
1	Bauer, Scheim, Pyne, Travers & Hammond (2015)	Ontario, Canada	Identify intervenable social factors associated with a reduction in suicide risk.
2	Clements-Nolle, Marx & Katz (2006)	San Francisco (1997)	Explore whether victimization and discrimination were independently associated with attempted suicide.
3	Colizzi, Costa & Todarello (2015)	Bari, Italy (2008-2012)	Explore prevalence of dissociative disorders and symptoms before and after hormone therapy.
4	Effrig, Bieschke & Locke (2011)	USA	Explore rates of harassment and discrimination, and mental health of college students, comparing those seeking treatment and those not.
5	Goldblum, Testa, Pflum, Hendricks, Bradford & Bongar (2012)	Virginia, USA	Explore relationship between gender based victimisation during school, and attempted suicide.
6	Grossman & D'Augelli (2007)	New York, USA	Explore whether 'life-threatening behaviours' related to parental reactions to participant's gender, and feelings about their bodies.
7	Heylens, Elaut, Kreukels, Paap, Cerwenka, Richter-Appelet, Cohen-Kettenis, Haraldsen & De Cuypere (2014)	The Netherlands, Belgium, Germany, Norway (Jan 2007-Oct 2010).	Obtain rates of psychiatric diagnoses in people seeking gender reassignment, who also had been diagnosed with gender identity disorder.

Paper	Author	Data collection location	Relevance of study aims
8	Heylens, Verroken, De Cock, T'Sjoen & De Cuypere (2014)	Ghent, Belgium (Jun 2005 - Mar 2009)	Explore the psychological impact of different stages of medical gender reassignment interventions.
9	Hoshiai, Matsumoto, Sato, Ohnishi, Okabe, Kishimoto, Terada & Kuroda (2010)	Okayama, Japan (1/4/97 and 31/10/05)	Investigate psychiatric comorbidity and life events in people attending the gender clinic.
10	House, Van Horn, Coppeans, Stepleman (2011)	USA (9/6/04 - 13/07/04)	Explore whether discrimination and interpersonal trauma relates to suicidal behaviours and self-injury in LGBT people.
11	Kenagy & Bostwick (2005)	Chicago, USA. (Sept 2000 - Mar 2001)	Discussion of trans community needs assessment findings.
12	Lobato, Koff, Schestatsky, de Vasconcellos Chaves, Petry, Crestana, Amaral, de Quandros Onofrio, Salvador, Silviera & Henriques (2007)	Porto Alegre, Brazil (Mar 1998 - Sept 2005)	Discuss the psychosocial characteristics of people using a clinic in Brazil.
13	Maguen & Shipherd (2010)	New England, USA (16-17 Jan 2004)	Report the frequency and predictive factors related to suicide in trans groups.
14	Marshall, Socías, Kerr, Salazar, Sued & Arístegui (2015)	Argentina (June 2013 – December 2013)	To examine the prevalence and correlates of suicide attempts in Argentinian trans people.

Paper	Author	Data collection location	Relevance of study aims
15	Mathy (2003)	USA (1st - 30th June 2000)	Explored whether trans people were at an increased risk of suicide, with LGB trans people being at an increased risk to heterosexual trans people. Also whether suicidal trans people would be more likely to use support services and have compulsivity issues than non-suicidal trans people
16	Meier, Fitzgerald, Pardo, Babcock (2011)	Mainly USA (Spring 2008, 3 month data collection)	Provide evidence concerning the impact of testosterone on trans men's psychological state
17	Miller & Grollman (2015)	USA (2008)	Explored whether perceived gender nonconformity was related to major and everyday transphobic discrimination, and whether transphobic discrimination related to attempted suicide. Also whether transphobic discrimination mediated any relationship between nonconformity and attempted suicide.
18	Nemoto, Bodeker & Iwamoto (2011)	San Fransisco, USA (Nov 2000 - July 2001); Oakland and San Francisco, USA (Aug 2004 - July 2006)	Describe the impact of violence, transphobic events and social support in trans women with a history of sex work, in relation to their ethnic/racial identity
19	Nuttbrock, Hwnhng, Bockting, Rosenblum, Mason & Becker (2010)	New York, USA	Establish the impact of gender-related abuse across the lifetime. In particular on depression and suicide
20	Operario & Nemoto (2005)	San Francisco, USA (Nov 2000 - July 2001)	Estimate HIV risk behaviours in API trans women

Paper	Author	Data collection location	Relevance of study aims
21	Perez-Brumer, Hatzenbuehler, Oldenburg & Bockting (2015)	USA (2003)	Explore relationship between both individual and structural stigma, and attempted suicide in a mixed trans group
22	Rood, Puckett, Pantalone & Bradford (2015)	Virginia, USA (2005-2006)	Explore whether transition, violence and discrimination relate to suicidal ideation, and whether transition and discrimination interact
23	Skagerberg, Parkinson & Carmichael (2013)	UK (8-month period)	Describe suicidal behaviours and self-harm in young people prior to attending a gender clinic
24	Terada, Matsumoto, Sato, Okabe, Kishimoto & Uchitomi (2011)	Okayama, Japan (1/4/97 - 31/10/05)	Describe risk factors for suicidal ideation and self-harm in people attending a gender clinic
25	Testa, Sciacca, Wang, Hendricks, Goldblum, Bradford & Bongar (2012)	Virginia, USA (Sept 2005 - July 2006)	Explore whether physical violence and sexual assault relate to suicide and substance misuse
26	Wilson, Chen, Arayasirikul, Wenzel & Raymond (2014)	San Francisco, USA (Aug 10 - Dec 10)	Explore impact on mental health of trans women, of using different physical transition-related interventions
27	Xavier, Bobbin, Singer & Budd (2005)	Washington DC, USA (18/9/99 - 21/01/00)	Discussion of trans community needs assessment findings

Table 2

Demographics and Design

Paper	Authors	Sample and Demographics	Design and Data Collection
1	Bauer, Scheim, Pyne, Travers & Hammond (2015)	N=380 Trans women (47.4%) and trans men (52.6%) Other demographics: age; gender fluidity; ethnoracial group; place of birth; sexual orientation region of residence; disability; parental status; childhood abuse; mental ill health; chronic illness or pain	Cross-sectional. Online survey. Variables studied: social inclusion, transphobia, transition. Suicide measured: Past year and lifetime suicidal ideation. Past year and lifetime suicide attempts. Purpose-designed questionnaire. Multiple items, dichotomous responses. Multivariable logistical regression, reporting cPARs, c%PARs, RR
2	Clements-Nolle, Marx & Katz (2006)	N=515 MTFs (n=392) and FTMs (n=123). Other demographics: age; ethnicity; sexual orientation; employment status; education; incarceration history.	Cross-sectional. One-to-one interviews. Variables studied: Knowledge of HIV status, depression (CES-D), self-esteem (Rosenberg Self-Esteem Inventory), drug or alcohol treatment history, discrimination or victimisation, sexual assault history. Suicide measures: Lifetime suicide attempts. Single-item with dichotomous response. Chi-square analysis, multivariate logistic regression, reporting AOR.

Paper	Authors	Sample and Demographics	Design and Data Collection
3	Colizzi, Costa & Todarello (2015)	N=118 MTFs (n=82) and FTMs (n=36). Other demographics: age, education, relationship status, living alone or with others, employment status, sexual orientation.	Longitudinal. Clinical Interview. During initial 24 week assessment period variables measured: dissociative experiences (Dissociative Disorders Interview Schedule, DISS; Dissociative Experiences Scale, DES), body uneasiness (Body Uneasiness Test, BUT). DES re-administration occurred post approx. 12 months hormone therapy, and 2 years (approx.) post gender confirmation surgery. Suicide measures: Lifetime suicide attempts assessed as part of clinical interview. Chi-square, independent t-tests.
4	Effrig, Bieschke & Locke (2011)	Sample 1 (not in or seeking counselling services): N=21686: trans people (gender unknown) and others (n=68); cis women (n=13244); cis men (n=7191). Other demographics: age, ethnicity, sexual orientation, prior history of seeking mental health treatment, educational stage. Sample 2 (clinical sample seeking or receiving counselling services): N=27616: trans people (gender unknown) (n=40); cis women (n=16615); cis men (n=9141). Other demographics: age, ethnicity, sexual orientation, educational stage.	Cross-sectional. Surveys - unclear how administered, for example online, or in person (details provided in separate article) Sample 1: Completed the Counseling Center Assessment of Psychological Symptoms (CCAPS-62) and the Standardized Data Set (SDS). Sample 2: Completed the Counseling Center Assessment of Psychological Symptoms (CCAPS-70) and the Standardized Data Set (SDS). Suicide measures: Lifetime suicide attempt measured as part of SDS questionnaire. Lifetime ideation also measured, possibly in same way although unclear. Single item for each. Categorical responses transformed into dichotomous responses. Chi-square and t-tests.

Paper	Authors	Sample and Demographics	Design and Data Collection
5	Goldblum, Testa, Pflum, Hendricks, Bradford & Bongar (2012)	N=290 Trans women (n=147), 33 with no plans to transition "full time". Trans men (n=81), 29 with no transition plans. Other demographics: age, racial/ethnic group, socioeconomic status, educational stage, urban vs. rural.	Cross-sectional. Online and paper survey. Variables studied: gender-based victimization during high school, high school completion, age of gender identity awareness and social transition. Suicide measures: Lifetime suicide attempts. Single-item with dichotomous response. Total number of attempts also recorded. Chi-square.
6	Grossman & D'Augelli (2007)	N=55 Young people: MTF (n=31) and FTM (n=24) Other demographics: age, ethnicity, educational stage, household composition.	Cross-sectional. Interviews. Variables studied: Mental health service contact; childhood gender nonconformity (modified Gender Conformity Scale), childhood abuse (Child and Adolescent Psychological Abuse Measure), body esteem (Body Esteem Scale (BE) for Adolescents and Adults). Suicide Measures: Suicidal ideation (lifetime and 12 month) and whether related to being trans measures as scale questions. Suicide attempts (lifetime) recorded, although unclear how as questions reported in additional study. Number of and seriousness of attempts explored, in addition to whether or not related to being trans. Chi-square, MANOVA and F-tests.

Paper	Authors	Sample and Demographics	Design and Data Collection
7	Heylens, Elaut, Kreukels, Paap, Cerwenka, Richter-Appelet, Cohen-Kettenis, Haraldsen & De Cuypere (2014)	N=305 MTFs (n=182) and FTMs (n=123) attending a gender clinic diagnosed with gender identity disorder. Other demographics: age.	Cross-sectional. Clinical interview. Variables studied: DSM-IV axis 1 (Mini International Neuropsychiatric Interview - Plus; MINI-Plus) and axis 2 (Structured Clinical Interview for DSM-IV Axis II Personality Disorders SCID-II) disorders, and age of onset of 'gender identity disorder'. Suicide Measures: suicidal ideation (preceding month only) and lifetime suicide attempts assessed. Measured as part of the MINI-Plus interview, no further details given. Chi-square, logistical regression. Also reported OR.
8	Heylens, Verroken, De Cock, T'Sjoen & De Cuypere (2014)	N=57. MTFs (n=46) and FTMs (n=11) undergoing gender confirmation surgery within a gender clinic. Other demographics: relationship status; living situation; employment status; sexual contacts; social contacts; drug and alcohol use.	Longitudinal. Survey. Baseline data collected included SCL-90 and 'psychosocial questionnaire'. Follow-up at 3-6 months post-commencing hormone therapy and 1-12 months post gender confirmation surgery. Suicide measures: Ideation and attempts. Info gathered during psychosocial questionnaire. No further information. McNemar and Fisher's Exact tests. Reported means and percentage outcomes.

Paper	Authors	Sample and Demographics	Design and Data Collection
9	Hoshiai, Matsumoto, Sato, Ohnishi, Okabe, Kishimoto, Terada & Kuroda (2010)	N=579. Male-to-female type (n=230) and female-to-male type (n=349) attending a gender clinic. Other demographics: age (further details of sample reported in separate paper).	Cross-sectional. Clinical interviews. Variables Studied: Occurrence of DSM-IV Axis I and Axis II disorders. Suicide Measures: Lifetime ideation assessed via. single-item with dichotomous response. Chi-square and Student's t-test.
10	House, Van Horn, Coppeans, Stepleman (2011)	N=1126 LGBT people. Trans people (n=164): women/feminine (n=135) and men/masculine people (n=29). Other demographics: age, sexual orientation, race, education, income, geographic region.	Cross-sectional. Online survey. Variables studied: Interpersonal trauma (7 items from Traumatic Life Events Questionnaire; TLEQ) and discrimination (Schedule of Sexually Discriminatory Events; SSDE). Suicide Measures: single-item, dichotomous response. Chi-square, F-test, logistic regression.
11	Kenagy & Bostwick (2005)	N=138. MTFs (n=78) and FTMs (n=33). Other demographics: age, education, race, employment status, income, sexual orientation.	Cross-sectional. Interviews. Variables studied: AIDS knowledge, perceived susceptibility to AIDS, current HIV risk, future HIV risk, HIV testing, HIV status, STD testing, STD status, drug and needle use, hormone use, perceived public safety, violence, health access and barriers, service needs. Suicide measures: lifetime ideation and lifetime attempts measured with single-item dichotomous response questions. T-test; Chi-square.

Paper	Authors	Sample and Demographics	Design and Data Collection
12	Lobato, Koff, Schestatsky, de Vasconcellos Chaves, Petry, Crestana, Amaral, de Quandros Onofrio, Salvador, Silviera & Henriques (2007)	N=138. MTFs (122) and FTMs (16). Other demographics: age, area of residence, education, relationship status.	Cross-sectional. Clinical interviews. Variables studied: Age at first sexual intercourse, convulsive episodes, age of first 'feelings of inadequacy', participation during childhood in games of 'opposite' sex, age of onset of physical and behavioural changes, age of starting hormone therapy, whether living according to ;desired sexual identity', family history of psychiatric disorders, comorbid Axis I or Axis II disorder, IQ. Suicide measures: During clinical interview instances of suicide attempts were recorded. No further details. Man-Whitney's test; Fisher's Exact test.
13	Maguen & Shipherd (2010)	N=153. 125 people assigned male at birth (6% of whom had a male gender identity, 45% with a somewhat or entirely female identity), and 28 people assigned female at birth (7% of whom had a female gender identity, 83% with a somewhat or entirely male identity). Other demographics: age, sexual orientation, ethnicity, education, relationship status	Cross-sectional. Hard-copy survey. Variables studied: mental health treatment, verbal abuse, physical violence, IV drug use. Suicide measures: single-item dichotomous variable for lifetime attempts. Further asked to record number of attempts (continuous scale 0-6). Chi-square; correlation; hierarchical multiple regression. Reported *r* and Wald chi-square.

Paper	Authors	Sample and Demographics	Design and Data Collection
14	Marshall, Socías, Kerr, Salazar, Sued & Arístegui (2015)	N = 482. Trans women (n = 438) and trans men (n = 44). Other demographics: age, location, education	Cross-sectional. Interviewer-administered semi-structured questionnaire. Variables studied: HIV status (positive vs. negative/unknown), having job other than sex work (y/n), history of sex work (y/n), internalised stigma (recorded as 'yes' if scored positive against list of negative emotions they may have felt in relation to identity), housing status (stable vs. unstable), experience of healthcare staff discrimination (y/n), violence from police (y/n). Suicide measures: single-item dichotomous variable for lifetime attempt with yes/no answer. Further questions concerning age at first attempt and 12 month history (y/n).
15	Mathy (2003)	N=40935. Whole sample separated and reduced to comparison groups: heterosexual trans people (n=29), non-heterosexual trans people (n-44), heterosexual cis women (n=1083), lesbian cis women (n=256), heterosexual cis men (n=1077), gay cis men (n=356), psychosocially matched cis women (n=73), psychosocially matched cis men (n=73). Other demographics: age, nationality, sexual orientation, relationship status, population size of residential area.	Cross-sectional. Online survey. Variables studied: current psychotherapy, past or current psychiatric medications use, past or current difficulties with control of alcohol or drugs, gambling, food, sex, work, spending. Suicide measures: Ideation and attempts explored with single item measures with dichotomous responses. However from the limited info in paper, appears that the attempts question asks about serious suicide attempts *or gestures* which may conflate two separate behaviours. Pearson chi-square.

Paper	Authors	Sample and Demographics	Design and Data Collection
16	Meier, Fitzgerald, Pardo, Babcock (2011)	N=369. FTM transsexual only sample. Other demographics: age, race, education, employment, country of residence, income, sexual orientation, history of gender-related medical interventions	Comparison. Online survey. Variables studied: Hormone usage, surgical status (chest and genital), alcohol and substance use, depression, anxiety, stress (Depression, Anxiety and Stress Scale; DASS), social support (Multidimensional Scale of Perceived Social Support (MSPSS), quality of life (Short Form 36-item Questionnaire version 2; SF-36v2). Suicide measures: Single-item measure of ideation, with dichotomous response. Chi-square; F-test; 2-way MANOVA.
17	Miller & Grollman (2015)	N = 4115. Trans men (n = 1601) and trans women (n = 2514). Other demographics: race and ethnicity, income, education, age, sexual minority status (sexual minority vs. heterosexual).	Cross-sectional. Online and paper-based survey. Variables studied: transition status measured with dichotomous yes/no variables (surgical treatment, hormonal treatment, living full-time), major transphobic discrimination (purpose designed scale of 26 major discrimination events), everyday transphobic discrimination (purpose designed scale of 11 types of discriminatory events), dichotomous drug/alcohol use (yes/no), dichotomous smoking (yes/no). Suicide measures: single-item dichotomous variable for lifetime attempt with yes/no answer.

Paper	Authors	Sample and Demographics	Design and Data Collection
18	Nemoto, Bodeker & Iwamoto (2011)	N=573 Trans women with a history of sex work *who identified as either African American (n=253), Asians/Pacific Islanders (APIs; n=110), Latina (n=110) or White (n=118).* Other demographics: age, ethnicity, education, income, sex work in past 6 months, housing situation, sexual orientation, surgical status (genital).	Cross-sectional. Interview. Variables studied: violence, harassment, transphobia, social support, depression (CES-D). Suicide measures: lifetime suicidal ideation and suicide attempts. Chi-square; multiple regression.
19	Nuttbrock, Hwnhng, Bockting, Rosenblum, Mason & Becker (2010)	N=571. Male-to-female transgender people only sample. Other demographics: age, race, education, sexual orientation, lifetime coming out, lifetime hormone use (related to gender).	Cross-sectional. Interviews. Variables studied: life-stage (delineated via the Life Review of Transgender Experiences, LRTE), depression (Mini International Neuropsychiatric Interview; MINI), gender abuse, gender role nonconformity. Suicide measures: Only sought if met criteria for depression at each life stage. Ideation, suicide plans, and attempts evaluated using single-item dichotomous response questions. the three questions then: Yes (1)/No (0). These were summed to form a score from 0-3. Logistic regression. Reported odds ratios.

Paper	Authors	Sample and Demographics	Design and Data Collection
20	Operario & Nemoto (2005)	N=110 Asian/Pacific Island MTF transgenders. Other demographics: age, gender identity, country of birth, years in the US, education, employment, recent commercial sex work, surgery status (genital).	Cross-sectional. Interview. Variables studied: sexual behaviours, substance use, HIV status, 12 month prevalence of STIs, depression (CES-D). Suicide measures: lifetime suicide attempts reported via a dichotomous response single-item question. Pearson chi-square; multivariate logistic regression. Reported adjusted odds ratios.
21	Perez-Brumer, Hatzenbuehler, Oldenburg & Bockting (2015)	N=1229. Sample separated and coded as male-to-female (n=697) or female-to-male (n=532). Other demographics: age, race, education, gross household annual income, urbanicity.	Cross-sectional. Online survey. Variables studied: internalized transphobia, structural stigma. Suicide measures: single-item dichotomous variable for lifetime attempts. Further asked when last attempt was and coded for whether within last 12 months or not. Bivariate logistic generalised estimating equation modelling; multivariable logistic generalised estimating equation modelling. Reported adjusted odds ratios.
22	Rood, Puckett, Pantalone & Bradford (2015)	N=350. Transgender women/MTF (n=229) and transgender men/FTM (n=121). Other demographics: age, race/ethnicity, education.	Cross-sectional. Online and paper-based survey. Variables studied: physical and sexual violence, discrimination, transition status. Suicide measures: single-item dichotomous variable for lifetime ideation. Logistic regression for each IV accounting for demographic variables, and a further interaction between transition and discrimination. Reported adjusted odds ratios.

Paper	Authors	Sample and Demographics	Design and Data Collection
23	Skagerberg, Parkinson & Carmichael (2013)	N=125. Natal males (n=68), and natal females (n=57). Other demographics: age, geographic region, strategic health authority.	Cross-sectional. File review and clinician consultation. Variables studies: self-harm history. Suicide measures: incidence of suicide attempts prior to attending clinic were obtained from file reviews. Thus the origin of data varies between people (with some emerging from letters, validated questionnaires, clinical notes etc. depending on where it was recorded, and by whom). Chi-square.
24	Terada, Matsumoto, Sato, Okabe, Kishimoto & Uchitomi (2011)	N=500. MTF type (n=189) and FTM type (311). Other demographics: age, age of onset, stage of interventions, education, relationship status, employment.	Cross-sectional. Clinical interview. Variables studied: self-harm. Suicide measures: Single item question assessing lifetime suicidal ideation (Y/N). Further question assessing history of self-mutilation *including* suicide attempt, which is ignored due to conflation with self-harm. Chi-square; multiple logistic regression. Reported odds ratios.
25	Testa, Sciacca, Wang, Hendricks, Goldblum, Bradford & Bongar (2012)	N=271. Trans women (n=179), trans men (n=92). Other demographics: age, race/ethnicity, socioeconomic status, education.	Cross-sectional. Online and paper survey. Variables studied: physical violence, sexual violence, alcohol and substance use. Suicide measures: Ideation and attempts (lifetime) assessed with single-items with a dichotomous response. Number of suicide attempts recorded. Logistic regression; ordinal logistic regression. Reported adjusted odds ratios.

Paper	Authors	Sample and Demographics	Design and Data Collection
26	Wilson, Chen, Arayasirikul, Wenzel & Raymond (2014)	N=314 Transwomen only sample. Other demographics: age, race/ethnicity, gender identity, sexual orientation, income, educational attainment, HIV status, whether in receipt of welfare.	Cross-sectional. Interviewer administered survey. Variables studied: transition-related medical care, hormone use, surgical status (chest and genital), diagnosed depression or anxiety, alcohol or substance use, IV substance use, high-risk intercourse. Suicide measures: lifetime suicidal ideation evaluated using a single-item question with a dichotomous response. Chi-square; pairwise tests; logistic regression. Reported *F* and odds ratios.
27	Xavier, Bobbin, Singer & Budd (2005)	N=248. Natal males/MTFs (n=188) and natal females/FTMs (n=60). Other demographics: age, race, gender identity, sexual orientation, education, employment, income.	Cross-sectional. Interviewer administered survey. Variables studied: violence and crime victimisation, access to regular health care services, access to transgender-related health care, anatomical inventory, housing issues, substance use, HIV testing and status, HIV risk behaviours, demand for specific services and self-assessment of most immediate needs. Suicide measures: Unclear. Study reports data for lifetime ideation, in addition to exploring whether related to gender issues. Chi-square; logistic regression. Reported odds ratios.

Table 3

STROBE scores for each paper

Paper	Authors	STROBE %
1	Bauer et al., 2015	76
2	Clements-Nolle et al., 2006	65
3	Colizzi et al., 2015	69
4	Effring et al., 2011	56
5	Goldblum et al., 2012	50
6	Grossman & D'Augelli (2007)	44
7	Heylens et al., 2014a	47
8	Heylens et al., 2014b	57
9	Hoshiai et al., 2010	44
10	House et al., 2011	59
11	Kenagy & Bostwick (2005)	47
12	Lobato et al., (2007)	47
13	Maguen & Shipherd (2010)	53
14	Marshall et al., (2015)	65
15	Mathy (2003)	56
16	Meier et al., (2011)	47
17	Miller & Grollman (2015)	72
18	Nemoto et al., (2011)	53
19	Nuttbrock et al., (2010)	53
20	Operario & Nemoto (2005)	59
21	Perez-Brumer et al., (2015)	65
22	Rood et al., (2015)	63
23	Skagerberg et al., (2013)	38
24	Terada et al., (2011)	59
25	Testa et al., (2012)	62
26	Wilson et al., (2014)	56
27	Xavier et al., (2005)	18

Table 4

Key Results and Limitations

Paper	Author	Key findings	Limitations
1	Bauer, Scheim, Pyne, Travers & Hammond (2015)	*Prevalence*: 35.1% (95% CI: 27.6, 42.5) past year suicidal ideation; 11.2% (95% CI: 6.0, 16.4) past year suicide attempt. *Risk Factors:* Among people with ideation factors significantly associate with increased attempt risk were strong support from leaders (RR = 5.24; 95% CI: 2.20, 12.46), and being in the process of transitioning (RR = 2.91; 95% CI: 1.48,5.76) in compared to those who wanted to transition but had not started. *Protective Factors:* High levels of social support related to a 49% reduction in suicide ideation (RR = 0.51; 95% CI: 0.28, 0.94), and an 82% reduction in attempt risk among those with ideation (RR = 0.18; 95% CI: 0.04, 0.73). Having one or more identity documents reflecting gender identity was associated with reduced past-year ideation (RR = 0.56; 95% CI: 0.35, 0.90) and attempts (RR = 0.26; 95% CI:0.11, 0.62). Lower transphobia was associated with a 66% relative risk reduction of past-year ideation (RR = 0.34; 95% CI: 0.17, 0.67) and a further 76% relative risk reduction (RR = 0.24; 95% CI: 0.07, 0.82) for attempts. Of those who wanted to medically transition,	Low statistical power. Cross-sectional, therefore unable to establish temporality or determine whether all possible causes preceded or followed the outcome. May also have thus inadvertently controlled for some mediating effects or inadequately controlled some confounding factors. Only considered past year ideation and attempts so may miss important factors that lead to becoming suicidal rather than those that are related to continued attempts. Impact of variables on each other not analysed. No details of causality.

Paper	Author	Key findings	Limitations
		people taking hormones were less likely to experience suicidal ideation (RR = 0.52; 95% CI: 0.37, 0.75). Completing a medical transition was associated with a 62% relative risk reduction (RR = 0.38; 95% CI: 0.22,0.66) in ideation. *Unrelated to suicide:* Religiosity, social transition variables, gender support from people other than parents.	
2	Clements-Nolle, Marx & Katz (2006)	*Prevalence:* 32% (95% CI: 28%-36%) attempted suicide. *Risk Factors:* Ethnicity; being White associated with increased risk (38% v. 29%). Age; being under 25 (46% v. 30%). Recent unemployment (37% v. 28%). History of incarceration (38% v. 25%). Having depression (40% v. 20%), and low self-esteem (mean RSEI = 30 vs. 33). Having a history of alcohol or drug treatment (50% v. 25%), forced sex/rape (41% v. 19%), gender discrimination (42% v. 16$), verbal gender victimisation (34% v. 21%), or physical gender victimisation (49% v. 23%). In the multivariate analysis, younger age (under 25) (Adjusted Odds Ratio (AOR) = 2.17; 95% CI: 1.17, 4.01), depression (AOR = 1.96; 95% CI: 1.17, 3.26), a history of alcohol or drug treatment (AOR = 2.36; 95% CI: 1.46,3.81), forced sex or rape (AOR = 1.73; 95% CI: 1.07, 2.80), gender discrimination (AOR = 2.39; 95% CI: 1.45,3.94), and physical gender victimization (AOR = 1.77; 95% CI: 1.12,2.80) were independently associated with attempted suicide.	Cross-sectional (issues determining temporality and causality). Non-probability sampling.

Paper	Author	Key findings	Limitations
		Protective Factors: None reported. *Unrelated to suicide:* Attempts unrelated to gender (i.e. trans man or trans woman), sexual orientation or education. In trans women HIV was unrelated (not explored in trans men).	
3	Colizzi, Costa & Todarello (2015)	*Prevalence:* 21.2% suicide attempt. *Risk Factors:* Having a dissociative disorder diagnosis (34.3% compared to those without at 15.7%). *Protective Factors:* None reported *Unrelated to suicide:* None reported.	Possible issues of power in gender clinic. Diagnostic interview schedule may not have been reliable for identifying dissociative disorders in people with gender dysphoria. Unable to compare to general population due to unavailable normative data. In the clinic, continuous psychological support and also pharmacotherapy given which may affect results. Being eligible to receive treatment may reduce distress and affect results.
4	Effrig, Bieschke & Locke (2011)	*Prevalence:* 25.7% in trans sample attempted suicide. *Risk Factors:* Being trans rather than cis related to increased attempted suicide (25.7% vs 8.4% in clinical cis sample and 4.9% in non-clinical cis sample); and increased ideation in the clinical sample (62.2% trans vs. 24.7% cis) and non-clinical samples (42.6% trans vs. 16.2%). Suicidal ideation in trans students increased in those seeking treatment compared to those not seeking treatment. *Protective Factors:* None reported *Unrelated to suicide:* Whether in clinical or non-clinical trans group.	Comparison of trans people with various genders, to 'men' and 'women' (i.e., cisgender men and women). Some trans people may have identified as male or female and elected those categories rather than the transgender category, so it is not possible to say whether the cis sample included trans individuals or not. Those endorsing 'other' were combined with the trans category, thus actual sample is of those endorsing 'male' or female' compared to those who do not. In the clinical sample, not all sources of data included a 'prefer not to say' or 'other' option for

Paper	Author	Key findings	Limitations
			gender. Use of slightly different measures in different groups.
5	Goldblum, Testa, Pflum, Hendricks, Bradford & Bongar (2012)	*Prevalence:* 28.5% suicide attempts. *Risk Factors:* Gender identity; trans men significantly more likely to attempt suicide (32.1% v. 26.5%; $\chi^2 = 9.32$, $p = .025$). Age; younger respondents more likely to have attempted suicide (33% under 45, 19% age 45-54, 6.9% over 55; $\chi^2 = 12.00$, $p = .035$). Ethnicity; Multiracial and 'other' groups 57.1% and 60% vs. White (23%), African American (25%), Latino/Latina (28%) ($\chi^2 = 15.10$, $p = .020$). Lower socio-economic status; low (30.5%), middle (29%), high (9.1%) ($\chi^2 = 8.14$, $p = .017$). History of gender-based victimisation (GBV) in school; those with a history almost 4 times more likely to have attempted suicide than those without ($\chi^2 = 12.80$, $p = .001$; odds ratio = 3.87). True for trans women ($\chi^2 = 13.60$, $p = .001$) and for trans men ($\chi^2 = 4.40$, $p = .036$). *Protective Factors:* None recorded. *Unrelated to suicide:* educational attainment and whether urban vs. rural location.	Non-probability sample. Cross-sectional (issues determining temporality and causality). Self-report and retrospective measures. Separates the sample by sex assigned at birth combined with intent to transition, not by identity itself (based on research findings).
6	Grossman & D'Augelli (2007)	*Prevalence:* Ideation (45%); lifetime attempts (26%). *Risk Factors:* Transgender-related suicide negativity (mean = 1.1 v. 0.2, $F = 18.13$, $p < .001$). Parental verbal abuse, $F=4.86$, $p < .05$. Parental physical abuse, $F = 8.90$, $p < .05$. Body esteem: decreased satisfaction with weight, $F = 5.05$,	Comparison of those who had attempted suicide with those who hadn't to establish risk factors relied on small sample sizes (14 v. 41 respectively). Convenience sample. Accessed people who used services or had access to support only which limits

Paper	Author	Key findings	Limitations
		$p < .05$; greater thoughts that others disapproved of their bodies, $F = 4.89$, $p < .05$. *Protective Factors:* None reported. *Unrelated to suicide:* Childhood gender conformity and general feelings about one's appearance.	generalisability. Self-report. Cross-sectional. Trans men were significantly older than trans women; however multivariate analysis was only performed for variables that may have related to suicide, not the demographic variables, so unclear whether this had an impact.
7	Heylens, Elaut, Kreukels, Paap, Cerwenka, Richter-Appelet, Cohen-Kettenis, Haraldsen & De Cuypere (2014)	*Prevalence:* 30% rate of suicide risk. *Risk Factors:* None recorded *Protective Factors:* None recorded *Unrelated to suicide:* gender identity. late vs. early onset of gender identity disorder, DSM-IV Axis II diagnosis, Country.	Possible issues of power in gender clinic. Did not compare suicide with Axis I comorbidities although found high rates of those. Not able to generalise. Cross-sectional. No discussion of those who did not want to take part.
8	Heylens, Verroken, De Cock, T'Sjoen & De Cuypere (2014)	*Prevalence:* Prevalence of suicide attempts at presentation (10.9%) and at follow-up (9.8%). *Risk Factors:* None reported *Protective Factors:* None reported *Unrelated to suicide:* Medical interventions (post hormones and possibly surgery)	Not clear whether the lack of finding in terms of suicide rates is because lifetime or even one year prevalence is unlikely to have been affected by an intervention as it is historical, unless further attempts were made while undergoing treatment, in which case the rate should only be able to increase. One person did commit suicide between assessment and follow up however this was not discussed

Paper	Author	Key findings	Limitations
			except to say that their data was excluded. o information given about the psychosocial questionnaire that asked about suicide (e.g. reliability, validity, questions). Different measures used at initial presentation and at follow-up. Unclear exactly when follow -up occurred (only mean given). Small population. Subjective questions. Ask about some occurrences (such as abuse history, and even suicide) which may impact on access to treatment, so may not have received accurate responses. Many trans people may not attend a clinic so unable to generalise. Short follow-up periods may not accurately measure changes. Out of all the potential participants many were not eligible, some were excluded, one killed themselves - unclear how those that were eligible and who wanted to and were able to complete the treatment process might differ from those who were not. Long periods for collecting follow-up data (e.g., 1 to 12 months post genital surgery may incorporate substantial differences between those at one month who may still be having to manage wounds and may be in pain and housebound compared to those at 12 months who may be healed and living their lives in the world.
9	Hoshiai,	*Prevalence:* 73.6% prevalence rate of lifetime suicidal	Conflation of suicide attempts with self-harm meant

Paper	Author	Key findings	Limitations
	Matsumoto, Sato, Ohnishi, Okabe, Kishimoto, Terada & Kuroda (2010)	ideation: 76.1% of trans women and 71.9% of trans men. *Risk Factors:* History of suicidal ideation related to current psychiatric comorbidity in trans men (89.5% thought of suicide compared to 69.8% of those without comorbidity) but not trans women (80.5% v. 75.1% respectively). *Protective Factors:* *Unrelated to suicide:* Gender identity was not related to lifetime prevalence of ideation.	that this data could not be explored. Clinic based and therefore potential for power issues. Cross-sectional. Unable to generalise. Exclusion of those with some forms of mental health issues, but not specified which. As with many clinic-based studies, limited definition of trans people.
10	House, Van Horn, Coppeans, Stepleman (2011)	*Prevalence:* *Risk Factors:* Female cisgender identity and being transgender related to increased suicide attempts compared to cisgender males (26.7%, 34.8% and 17.7% respectively; $\chi^2 = 23.5$, $p < .01$). Also related to being trans over being cisgender. *Protective Factors:* None reported/ *Unrelated to suicide:* Gender person lives in.	Most of the trans people in the sample were trans women. If being a cis woman or trans relates to greater suicide and the trans group is mostly women, it may be that being a women (cis or trans) is related to greater risk (either through identity or how people are treated). Would have been helpful to have explored that data. Inclusion of trans as a gender identity in comparison to 'men' and 'women' (i.e. cisgender individuals). Sample not random. Over-representation of White, well-educated and high-income participants. Cross-sectional.
11	Kenagy & Bostwick (2005)	*Prevalence:* 64% lifetime suicidal ideation. 27% lifetime suicide attempts. *Risk Factors:* Ethnicity; Whites more likely than POC to disclose suicidal ideation (77% v. 52%, $\chi^2 = 1$ (n = 107) = 7.02, $p = .008$). *Protective Factors:* None reported	Problematic gender questions i.e. asking about 'gender' at birth may lead participants to have referenced their gender identity and not the physical sex they were assigned. May also exclude those for whom their current gender identity is not always in conflict. Grouping participants with different

Paper	Author	Key findings	Limitations
		Unrelated to suicide: None reported	identities in to a gender binary omits the nuances of people's identities - especially those who are non-binary, and thus any different experiences they may have. Not possible to say whether the difference in POC and White groups was related to other factors (e.g. that the POC group was mostly trans women, compared to the White group with almost equal percentages of trans men and trans women - the majority of trans men were White - and this may have affected the findings around race). Sampling limited generalisability. POC category comprised of many different ethnic groups, and the White category included some Hispanic people. Unclear whether their experiences would be different to those of Caucasian White people for example.
12	Lobato, Koff, Schestatsky, de Vasconcellos Chaves, Petry, Crestana, Amaral, de Quandros Onofrio, Salvador, Silviera & Henriques	*Prevalence:* 14.2% suicide attempts. *Risk Factors:* Gender identity with suicide attempts being more common in trans women than trans men (14.8%(n = 18) v. 6.3% (n = 1), $p > 0.05$). *Protective Factors:* None reported. *Unrelated to suicide:* None reported.	Suicide measures were incidental to the study aims. Only one trans man had attempted suicide so difficult to draw comparisons in conclusion to trans women. Clinic based so issues of power. Not a generalisable sample to all trans people. Heterogeneous sample.

Paper	Author	Key findings	Limitations
	(2007)		
13	Maguen & Shipherd (2010)	*Prevalence:* 18% history of suicide attempts *Risk Factors:* Identity/category of trans people in the study, with trans men being most at risk 41% (trans women 20%, Bigender 9%, and male crossdressers 7%; $\chi^2 = 3$ (n = 142) = 11.67, $p < .05$). Sex assigned at birth with those who were assigned female more likely to report a past suicide attempt ($r = .30$, $p < .01$). Age; younger people more likely to report suicide attempt ($r = -.25$, $p < .01$). In final hierarchical regression model, it accounted for 49% variance and variables associated with suicide attempts included SAAB ($p = .07$), psychiatric hospitalisation ($p < .05$) and trans-related violence ($p = .06$). Report using cut off of .07 due to small sample size. *Protective Factors:* None reported. *Unrelated to suicide:* gender identity, ethnicity, education, relationship status. In the final model age, having had therapy for anxiety/depression, IV drug use or history of verbal threats were all non-significant.	Sample was almost exclusively trans feminine people, having been recruited at an event for this group. No discussion of differences in factors such as age between the trans masculine and trans feminine people. Cross-sectional. Convenience sample. Not generalisable to whole trans community, especially as people attending event may be better supported and have better networks. They may also have been financially better off. Majority of the sample were Caucasian. Sample split by sex assigned at birth and demographics are only reported for these groups, whereas in the inferential analysis there are four different groups, so it is not easy to relate the two.
14	Marshall, Socías, Kerr, Salazar, Sued & Arístegui (2015)	*Prevalence*: 33% lifetime suicide attempts. *Risk Factors*: increased odds of lifetime suicide attempts associated with positive HIV status (odds ratio [OR] = 1.69; 95% CI: 1.08, 2.66), internalised stigma (odds ratio [OR] = 2.31; 95% CI: 1.55, 3.46), experiences of discrimination by healthcare staff (odds ratio [OR] = 1.65;	Sampling may have limited findings as only occurred in sex work venues or trans community venues, so those who do not readily access these (and may potentially be more isolated) will have been omitted. Findings are not generalisable to all trans people in Argentina. 18 participants were

Paper	Author	Key findings	Limitations
		95% CI: 1.09, 2.49), history of violence by police (odds ratio [OR] = 1.83; 95% CI: 1.24, 2.69. When positively associated variables were entered in to a multivariate model, internalised stigma (adjusted odds ratio [AOR] = 2.34; 95% CI: 1.44, 3.79) remained related to attempted suicide. *Protective Factors*: Reduced odds of lifetime suicide attempts related to stable over unstable housing (odds ratio [OR] = 0.46; 95% CI: 0.29, 0.73). This relationship remained when positively associated variables were entered in to a multivariate model (adjusted odds ratio [AOR] = 0.52; 95% CI: 0.32, 0.84). *Unrelated to suicide*: gender identity, age, location, educational attainment, employment status, history of sex work. When positively associated variables were entered in to a multivariate model, history of police violence was unrelated.	omitted for refusing to provide data relating to suicide attempts, so no idea if they differed from those who did. Study is cross-sectional, limiting causality. Some variables related to current events while others referred to lifetime experience. Details of suicide attempts not recorded/reported. No details of related factors recorded (e.g., depression). Measure of internalised stigma was not validated. Sample almost exclusively trans women, which although authors claim reflects likely trans population, may have influenced findings.
15	Mathy (2003)	*Prevalence:* ideation 37% *Risk Factors:* Being trans was related to significantly greater suicidal ideation than in unmatched cis women (24.2%) or cis men (13%), psychosocially matched cis men (15.1%) and cis gay man (19.7%). Trans people who had suicidal ideation were more likely to have previously used psychotherapy (53.8%, n = 39 v. not used psychotherapy 17.6%, n = 34; $\chi^2 = 10.21$, $p < .001$), or currently using psychotherapy (n = 13, 69.2%) v. not having therapy (30%,	There is no discussion of the utility or validity of the psychosocial matching criteria. Sample from those using a specific news website limits generalisability. No consideration of ethnicity. Cross-sectional. Conflation of gestures and attempts limits use of the data on suicide attempts; hence it has been omitted here.

Paper	Author	Key findings	Limitations
		n = 60, χ^2 = 7.06, p < .01), have previously used medications (n = 23, 60.9% v. n =50, 26.0%; χ^2 = 8.22, p < .01), or currently be on medications (n = 16, 81.3%) v. not currently on medication (n = 57, 24.6%; χ^2 = 17.23, p < .001). *Protective Factors:* None reported. *Unrelated to suicide:* No significant difference in ideation between trans people and psychosocially matched cis women (24.7%) or cis lesbians (30.9%). Suicidal ideation was also unrelated to past alcohol/drug control issues, or gambling, food, sex, work, spending. In terms of attempters, no difference in past gambling, food, sex, work or spending control.	
16	Meier, Fitzgerald, Pardo, Babcock (2011)	*Prevalence:* 43% lifetime prevalence of attempt in trans men. 42% lifetime prevalence of attempts in trans men taking testosterone, and 46% in trans men not taking testosterone. *Risk Factors:* None reported. *Protective Factors:* None reported. *Unrelated to suicide:* Hormone therapy status.	Lifetime prevalence may be relatively unaffected by taking hormones if only taking them for a short period, or if not taking them because do not feel want/need them. Cross-sectional. Unclear how trans men were defined in this paper. Largely White educated US residents in the sample. Limited generalisability.
17	Miller & Grollman (2015)	*Prevalence:* 44% attempted suicide. *Risk Factors:* Gender non-conformity significantly related to increased odds of attempted suicide than gender conformity, when accounting for transition status and demographic factors (Odds Ratio (OR) = 1.07; 95% CI:	Cross-sectional. Non-representative sample. Other factors related to suicide but not explored and not possible to discern from tables direction of relationship. Gender nonconformity relied on self-report of how participants thought others perceived

Paper	Author	Key findings	Limitations
		1.01, 1.14). However the relationship is not significant after transphobic discrimination is added. Transphobic discrimination (major discrimination, $Z = 5.43$; $p < .001$: everyday discrimination, $Z = 8.57$; $p < .001$) mediated relationship between gender nonconformity and suicide attempts. Major transphobic discrimination (OR = 1.12; 95% CI: 1.09, 1.15) and everyday transphobic discrimination (OR = 1.05; 95% CI: 1.01, 1.09) were significantly related to increased odds of attempted suicide, with more discriminatory events linked to greater likelihood of attempted suicide. *Protective Factors:* None reported. *Unrelated to suicide:* None reported.	them, which may not reflect other's experiences. Measure also requested information about current perceptions, whereas suicide recorded was lifetime. Major discrimination was lifetime. Everyday discrimination measure did not record frequency or when events occurred. Could argue that being perceived as gender nonconforming is actually a form of everyday discrimination, similar to misgendering, or that someone may only feel they are seen as trans because of their everyday experiences of discrimination. Many differences in sample between trans men and trans women, and on other variables. Does not attempt to understand reasons for non/conformity.
18	Nemoto, Bodeker & Iwamoto (2011)	*Prevalence:* 55.6% prevalence suicidal ideation. Amongst those with ideation, 61.4% attempts. *Risk Factors:* Ethnicity; for ideation there were significant differences between African Americans (64.1% prevalence, n = 231), Latinas (45.5%, n = 110), Asian/Pacific Islanders (28.2%, n = 110), and Whites (74.1%, n = 116), $\chi^2 = 60.93$, $p < .01$). Suicidal ideation also related to current depression (63.8% in those with ideation v. 36.2% in those who had never experienced ideation; $\chi^2 = 64.3$, $p < .01$). *Protective Factors:* None reported. *Unrelated to suicide:* Attempted suicide was not related to ethnicity.	Difficult to generalise due to purposive sampling. Cross-sectional. Potential for response bias. Retrospective memory may be problematic. Only those positive for depression were asked about suicide, so the data may be skewed.

Paper	Author	Key findings	Limitations
19	Nuttbrock, Hwnhng, Bockting, Rosenblum, Mason & Becker (2010)	*Prevalence:* Whole group: lifetime ideation (53.5%) and attempts (27.9%). In younger respondents lifetime ideation (53%) and attempts (31.2%). In older respondents lifetime ideation (53.5%) and attempts (28%). *Risk Factors:* Life stage; among the younger respondent group there were very high numbers of attempts in early adolescence (15.6%) with a significant decrease in to early middle age (8.7%). *Protective Factors:* None reported. *Unrelated to suicide:* None reported.	Cross-sectional. Different lengths of time in different 'life stages', for different age groups. Heavily reliant on retrospective memory.
20	Operario & Nemoto (2005)	*Prevalence:* *Risk Factors:* Unprotected receptive anal intercourse (URAI) related to those who had attempted suicide (55% of those who had attempted suicide also had URAI, compared to 22% of those who hadn't attempted suicide, $p = .02$). Multivariate analysis demonstrated that URAI was significantly associated with past suicide attempts (OR = 5.83, 95% CI: 1.02, 33.44). *Protective Factors:* None reported. *Unrelated to suicide:* Attempts were not related to sex while under the influence of substances, or to illicit drug use in general.	Sample only of API women who were sex workers so hard to generalise to wider populations. Very large proportion of Filipinas so possible it is unrepresentative of the wider API communities. Only undertaken in English which limits access to those without English language abilities. Cultural taboos may have prevented honest responses to some items. Cross-sectional.
21	Perez-Brumer, Hatzenbuehler,	*Prevalence:* lifetime attempts 32.4%; past 12 month attempts 6.4%.	Sample was mostly White with other racial and ethnic groups aggregated in to ‘non-White’. Gender

Paper	Author	Key findings	Limitations
	Oldenburg & Bockting (2015)	*Risk Factors*: For individual-level factors model, having higher levels of internalised transphobia (Adjusted Odds Ratio (AOR) = 1.18; 95% CI: 1.04, 1.33) related to significantly increased odds of lifetime suicide attempt. *Protective Factors:* For individual-level factors model, being male-to-female over being female-to-male (Adjusted Odds Ratio (AOR) = 0.63; 95% CI: 0.46, 0.85), being White instead of non-White (Adjusted Odds Ratio (AOR) = 0.58; 95% CI: 0.43, 0.80), having at least a college education (Adjusted Odds Ratio (AOR) = 0.49; 95% CI: 0.31, 0.75), related to significantly decreased odds of lifetime suicide attempt. For past 12 months attempt only having a college education or higher related to decreased odds of an attempt (Adjusted Odds Ratio (AOR) = 0.26; 95% CI: 0.10, 0.65). For state-level structural factors model, the factors which related to significant decreases in lifetime suicide attempts were lower levels of structural stigma (Adjusted Odds Ratio (AOR) =0.96; 95% CI: 0.92, 0.997), being male-to-female (Adjusted Odds Ratio (AOR) =0.59; 95% CI: 0.43-0.80), being White rather than non-white (Adjusted Odds Ratio (AOR) = 0.57; 95% CI: 0.41, 0.78), having at least a college education (Adjusted Odds Ratio (AOR) = 0.50; 95% CI: 0.32, 0.78), and higher levels of internalised transphobia over lower levels (Adjusted Odds Ratio (AOR) = 1.18; 95% CI: 1.04, 1.33). For past 12 months attempts, only having at least a college education related to significant decrease in odds of attempt (Adjusted	was categorised in ways which may not reflect participant's identities. Measure of structural stigma relied on information from 2000-2008, which may reflect different social attitudes or stigma from that at the time of data collection in 2003. Also relied on measures referring to sexual minority stigma. Survey was online and unrepresentative. Study was cross-sectional thus it is not possible to assume causation.

Paper	Author	Key findings	Limitations
		Odds Ratio (AOR) = 0.26; 95% CI: 0.10, 0.66). *Unrelated to Suicide:* For individual-level factors model lifetime attempts were unrelated to age, household income and urbanicity; past 12 months attempts were unrelated to gender identity, age, race, household income and urbanicity. Furthermore, internalised transphobia related increased odds but was non-significant (Adjusted Odds Ratio (AOR) = 1.11; 95% CI: 0.85, 1.46). For state-level structural factors model, lifetime attempts were unrelated to age, household income and urbanicity; past 12 months attempts were unrelated to gender identity, age, race, household income, urbanicity structural stigma, internalised transphobia.	
22	Rood, Puckett, Pantalone & Bradford (2015)	*Prevalence*: Lifetime ideation was 64.9%. *Risk Factors*: Violence predicted suicidal ideation with odds of ideation being higher in those experiencing either sexual or physical violence compared to those who experienced none (Adjusted Odds Ratio (AOR) = 4.18; 95% CI: 2.25, 7.76), and odds being highest in those experiencing both types of violence (AOR = 5.44; 95% CI: 2.41, 12.30). Experiencing one or two episodes of discrimination compared to experiencing none, related to increased odds of ideation (AOR = 2.09; 95% CI: 1.09, 4.01, and AOR = 2.86; 95% CI: 1.11, 7.38 respectively). Transition status related to suicidal ideation where people planning to transition (AOR = 2.85; 95% CI: 1.42, 5.72) or	Cross-sectional study limits ability to form causal conclusions. Although identity as transgender was established using a definition which included many different expressions of identity, participants were allocated binary labels which may not represent their actual identities and thus affect the generalisability of results. The questions used to determine discrimination were not fully explained. Question relating to transition may have excluded participants who were unsure, non-binary or gender fluid. Physical and sexual violence were aggregated. Sample was not fully representative. Sample was primarily White and educated.

Paper	Author	Key findings	Limitations
		who had already transitioned (AOR = 2.68; 95% CI: 1.43, 5.02) had higher odds of reporting it than those who did not plan to transition. Those planning to or already transitioned, who experienced discrimination had significantly increased odds of reporting lifetime ideation compared to those with no desire to transition and who experienced no discrimination (AOR = 1.17; 95% CI: 1.00, 1.36). *Protective Factors*: None reported. *Unrelated to suicide*: Although one or two episodes of discrimination predicted suicidal ideation, further experiences did not relate to significantly increased odds (possibly due to small number of participants experiencing greater rates of discrimination).	Measures were not validated.
23	Skagerberg, Parkinson & Carmichael (2013)	*Prevalence:* 10% suicide attempts prior to clinic attendance. *Risk Factors:* Possible impact of age - more common in those over 12 years old, but no significance testing undertaken. *Protective Factors:* None reported. *Unrelated to suicide:* sex assigned at birth (no difference between those assigned female and those assigned male).	Only young people attending a clinic so limits generalisability. Figures are a likely underestimate as only data from secondary sources. Only report attempts which it may be expected would be relatively low in a group comprising children. Ideation may have been a more useful construct. Data for each participant may be from different sources. Some groups had small numbers so unsure about the validity of generalisations. Possibly higher rates in some people unable to obtain a referral. No details of other demographics.

Paper	Author	Key findings	Limitations
24	Terada, Matsumoto, Sato, Okabe, Kishimoto & Uchitomi (2011)	*Prevalence:* Ideation was present for 75% trans women and 70 % trans men *Risk Factors:* Among trans women with a diagnosis of gender identity disorder, suicidal ideation was associated with younger age and higher stage of therapy at first examination *Protective Factors:* None reported. *Unrelated to suicide:* Age in general group, age at onset, stage of therapy in general group, level of education, relationship status, employment. No factors related to suicidal ideation in trans men.	Clinic based so unrepresentative and subject to power issues. Retrospective self-report. Potential for unreported incidents or biased recall. Problematic exclusion criteria.
25	Testa, Sciacca, Wang, Hendricks, Goldblum, Bradford & Bongar (2012)	*Prevalence:* In trans women suicidal ideation was 65.3% and attempts were 26.3%. In trans men, ideation was 83% and attempts were 30.4%. *Risk Factors:* In trans women greater physical violence related to increased lifetime suicidal ideation (81.7% v. 53.5% with no physical violence, age adjusted OR = 3.83, $p < .001$). It was also related to greater risk of attempts (46.5% v. 13.7%, age adjusted OR = 5.13, $p < .001$). Physical violence also related to increased history of suicide attempts in trans men (45.2% v. 19.1% with no physical violence history, age adjusted OR = 3.52, $p <$ .009). Risk of ideation was greater in trans men subject to unwanted sexual activity, in comparison to those who were not (96.7% vs 75.4%, age adjusted OR = 9.36, $p = .036$), as were suicide attempts (53.1% v. 19.0%, age adjusted OR =	Sampling procedure limits generalisability. Those without good networks were underrepresented. No data included for people who didn't intend to transition full-time or who already had. Retrospective self-report data. Cross-sectional.

Paper	Author	Key findings	Limitations
		5.08, p = .001). Similarly for trans women who had experienced sexual violence, they were more likely to have attempted suicide than in those who had not (47.4% v. 19.4%, age adjusted OR = 3.60, p < .001). Past sexual violence related to a greater number of suicide attempts in all trans people. *Protective Factors:* None reported. *Unrelated to suicide:* ideation was not related to physical violence in trans men, or sexual violence in trans women.	
26	Wilson, Chen, Arayasirikul, Wenzel & Raymond (2014)	*Prevalence:* Not reported. *Risk Factors:* None reported. *Protective Factors:* Less likelihood of suicidal ideation in trans women who used hormones OR = 0.2, 95% CI: 0.1, 0.5, p < .05), had breast augmentation (OR = 0.3, 95% CI: 0.1, 0.6, p < .05). *Unrelated to suicide:* whether or not participant had undergone genital surgery, and whether they had used medical care.	Trans women defined as 'transfemale' or MTF, which may have excluded some people. Poor generalisability. Cross-sectional.
27	Xavier, Bobbin, Singer & Budd (2005)	*Prevalence:* 38% lifetime ideation, 16% lifetime attempts (49% of those with ideation). *Risk Factors:* Lifetime ideation related to SAAB; people AFAB more likely to disclose ideation than those AMAB (52% v. 33%, p < .05). Age; higher rates in younger people (13-19 years, 41%) and older people (30 or over; 52%) with lower rates in the middle age group (20-29 years;	Low rates of suicidal behaviours may related to high numbers of African American participants (70%) who were least likely group to disclose this. Highest rates in the older group may be because it is a large age range (30-61 years). This makes it hard to compare. Unclear how identity and the reported natal gender interact for participants, and how this

Paper	Author	Key findings	Limitations
		18%). Race; African Americans significantly less likely to disclose suicidal ideation than other racial groups. *Protective Factors:* None reported. *Unrelated to suicide:* None reported.	may influence results. For example the groups are separated into 'natal males' and 'natal females'. But some people in each of those categories identify their gender as the same as their natal sex. May be that these people are gender fluid so sometimes this is true, or that they may have erroneously taken part, or that they did not understand the question for example. It would be useful to have had an explanation of this. Cross-sectional. Poor generalisability.

Table 5

Suicide-Related Topic Studied

Author	Ideation Only	Attempts Only	Ideation and Attempts	Suicidal Ideation			Suicide Attempts		
				Year	Lifetime	N/K	Year	Lifetime	N/K
Heylens et al., 2014a	✓					✓			
Hoshiai et al., 2010	✓				✓				
Mathy (2003)	✓				✓				
Rood et al., (2015)	✓				✓				
Terada et al., (2011)	✓				✓				
Wilson et al., (2014)	✓				✓				
Clements-Nolle et al., 2006		✓						✓	
Colizzi et al., 2015		✓							✓
Goldblum et al., 2012		✓						✓	
House et al., 2011		✓						✓	
Lobato et al., (2007)		✓							✓
Marshall et al., (2015)		✓						✓	

Author	Ideation Only	Attempts Only	Ideation and Attempts	Suicidal Ideation			Suicide Attempts		
				Year	Lifetime	N/K	Year	Lifetime	N/K
Maguen & Shipherd (2010)		✓						✓	
Meier et al., (2011)		✓						✓	
Miller & Grollman (2015)		✓						✓	
Operario & Nemoto (2005)		✓						✓	
Perez-Brumer et al., (2015)			✓				✓	✓	
Skagerberg et al., (2013)		✓							✓
Bauer et al., 2015			✓	✓			✓		
Effring et al., 2011			✓			✓		✓	
Grossman & D'Augelli (2007)			✓			✓			✓
Heylens et al., 2014b			✓			✓			✓
Kenagy & Bostwick			✓		✓			✓	

Author	Ideation Only	Attempts Only	Ideation and Attempts	Suicidal Ideation			Suicide Attempts		
				Year	Lifetime	N/K	Year	Lifetime	N/K
(2005)									
Nemoto et al., (2011)			✓		✓			✓	
Nuttbrock et al., (2010)			✓		✓			✓	
Testa et al., (2012)			✓		✓			✓	
Xavier et al., (2005)			✓		✓			✓	

Table 6

Demographic Variables

Variable	Related to ideation	Related to attempts
Stable housing		Y
History of incarceration		Y
Socio-economic status		Y
Religiosity	N	
Education	N	Y / N: mixed findings
Relationship status	N	N
Location		N
Sexual orientation		N
Being trans not cis	Y	Y (although may be further gender or sexual orientation differences)
Gender differences	N	Y / N: mixed findings
Sex assigned at birth	Y	Y / N: mixed findings
Employment status	N	Y / N: mixed findings
Age	Y / N: mixed findings	Y / N: mixed findings
Ethnicity	Y	Y / N: mixed findings
Income		N

Table 7

Mental Health-Related Variables

Variable	Related to ideation	Related to attempts
History of abuse	Y	
Use of psychotherapy	Y	
Use of psychiatric medications	Y	
Drug/alcohol interventions		Y
Psychiatric hospitalisation		Y (although only combined with victimisation variables)
Comorbid dissociative identity disorder		Y
Low self-esteem		Y
Impulse control difficulties	N	N
Comorbid Axis II diagnosis		N
Depression	Y	Y
Help-seeking	Y	N
Psychiatric comorbidities	Y/N: mixed findings	

Table 8

Trans-Related Variables

Variable	Related to ideation	Related to attempts
Trans-related suicide negativity	Y	
Childhood gender conformity	N	N
Age of onset of 'gender dysphoria'	N	N
Social support	Y	Y
Social support from parents	Y	
Social support from others	N	
Social support from leaders		Y
Social transition	N	
Identity documents matching gender identity	Y	Y
Completing medical transition		N
Being in the process of medical transition	Y	Y
Transition status	Y	
Stage of therapy at initial presentation	Y/N: mixed findings	
Hormone therapy	Y	
Breast augmentation	Y (trans women)	
Genital surgery		N (trans women)
Use of transition related medical care		N

Table 9

Negative Interpersonal Experiences

Variable	Related to ideation	Related to attempts
Level of transphobia	Y	Y
Internalised transphobia		Y
Gender nonconformity		Y (mediated by discrimination)
Gender-related discrimination (major events and everyday discrimination)	Y	Y
Verbal gender-based victimisation		Y
Gender-based victimisation in school		Y
Sexual violence	Y	Y/N: mixed findings
Physical violence	Y	Y/N: mixed findings
Structural stigma		Y

Table 10

Individual Variables

Variable	Related to ideation	Related to attempts
Satisfaction with weight	Y	
Satisfaction with appearance	N	
Other perceptions of body	Y	
Unprotected receptive anal intercourse		Y
Sex under the influence of substances		N
HIV status		N (trans women), Y (mixed)
History of sex work		N
Illicit substance use		N

Appendix A: Search Terms

Trans-related search terms: gender dysphoria, transgender, transsexual, gender variant, non-binary, genderqueer, genderfluid, gender non-conformity, agender, two-spirit, kathoey, M2F, MTF, F2M, FTM, trans m*, trans w*, male to female, female to male, androgyne, bi-gender, gender neutral, neutrois, bissu, kinnar, khusra, gender identity disorder.

Suicide-related search terms: attempted suicide, suicide prevention, suicid*, suicidal ideation.

Appendix B: STROBE Checklist

STROBE Statement—checklist of items that should be included in reports of observational studies

	Item No	Recommendation
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found
Introduction		
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported
Objectives	3	State specific objectives, including any pre-specified hypotheses
Methods		
Study design	4	Present key elements of study design early in the paper
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection
Participants	6	(*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up *Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the

		rationale for the choice of cases and controls *Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants
		(*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed *Case-control study*—For matched studies, give matching criteria and the number of controls per case
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group
Bias	9	Describe any efforts to address potential sources of bias
Study size	10	Explain how the study size was arrived at
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding
		(*b*) Describe any methods used to examine subgroups and interactions
		(*c*) Explain how missing data were addressed

		(*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed *Case-control study*—If applicable, explain how matching of cases and controls was addressed *Cross-sectional study*—If applicable, describe analytical methods taking account of sampling strategy
		(*e*) Describe any sensitivity analyses
Results		
Participants	13*	(a) Report numbers of individuals at each stage of study—e.g., numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed
		(b) Give reasons for non-participation at each stage
		(c) Consider use of a flow diagram
Descriptive data	14*	(a) Give characteristics of study participants (e.g., demographic, clinical, social) and information on exposures and potential confounders
		(b) Indicate number of participants with missing data for each variable of interest
		(c) *Cohort study*—Summarise follow-up time (e.g., average and total amount)
Outcome data	15*	*Cohort study*—Report numbers of outcome events or summary measures over time
		Case-control study—Report numbers in each exposure category, or

		summary measures of exposure
		Cross-sectional study—Report numbers of outcome events or summary measures
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (e.g., 95% confidence interval). Make clear which confounders were adjusted for and why they were included
		(*b*) Report category boundaries when continuous variables were categorized
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period
Other analyses	17	Report other analyses done—e.g., analyses of subgroups and interactions, and sensitivity analyses
Discussion		
Key results	18	Summarise key results with reference to study objectives
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence
Generalisability	21	Discuss the generalisability (external validity) of the study results
Other information		
Funding	22	Give the source of funding and the role of the funders for the present study

and, if applicable, for the original study on which the present article is based

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*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

Appendix C: Contributor Guidelines – Journal of Homosexuality

Manuscript Submission. Address manuscripts to the Editor: Dr. John P. Elia, jpelia@sfsu.edu

Prospective authors are to send the following items as e-mail attachments: (1) a cover letter indicating that the manuscript is not under consideration for publication elsewhere; (2) a blinded (i.e., with no references or indications as to the author's name) electronic copy of the manuscript; (3) an unblinded copy (complete with author's name, academic degree, professional affiliation, contact information, and any desired acknowledgment of research support or other credit) of the manuscript; and (4) a free-standing abstract of no more than 150 words excluding the title of the manuscript, which is to appear at the top of the page, and 5-7 key words. Also, manuscripts are to be submitted in English using Microsoft Word (in 12-point font, *Times New Roman*, double-spaced (with headers bearing the title or partial title of the manuscript), paginated, and with one-inch margins (top/bottom, left/right)). Manuscripts must not exceed 6,000 words (inclusive of references) –approximately 25 pages - unless an exception is made by the editor. Authors are to follow the publication guidelines of the *Publication Manual of the American Psychological Association,* 6th edition (2009). Authors are responsible for obtaining permission to reproduce copyrighted material from other sources and are required to sign an agreement for the transfer of copyright to the publisher. As an author, you are required to secure permission if you want to reproduce any figure, table, or extract from the text of another source. This applies to direct reproduction as well as "derivative reproduction" (where you have created a new figure or table which derives substantially from a copyrighted source.) All accepted manuscripts, artwork, and photographs become the property of the publisher.

References. References, citations, and general style of manuscripts should be prepared in accordance with the APA Publication Manual, 6th ed. (2010). Cite in the text by author and date (Lee, 2009) and include an alphabetical list at the end of the article. *Examples:*

Journal: Boehmer, U., & Case, P. (2006). Sexual minority women's interactions with breast cancer providers. *Women & Health, 44*(2), 41–58.

Book: Kinsey, A. C., Pomeroy, W. B., Martin, C. E., & Gebhard, P. H. (1953). *Sexual behavior in the human female.* Philadelphia, PA: W. B. Saunders Company.

Contribution to a Book : Kimmel, M. S. (1994). Masculinity as homophobia: Fear, shame, and silence in the construction of gender identity. In H. Brod & M. Kaufman (Eds.), *Theorizing masculinities* (pp. 119–141). Thousand Oaks, CA: Sage.

Illustrations. Illustrations submitted (line drawings, halftones, photos, photomicrographs, etc.) should be clean originals or digital files. Digital files are recommended for highest quality reproduction and should follow these guidelines:

- 300 dpi or higher
- Sized to fit on journal page
- EPS, TIFF, or PSD format only
- Submitted as separate files, not embedded in text files

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a minimum of 300 dpi will not be considered for print. Print Rates: $900 for the first page of color; $450 for the next 3 pages of color. A custom quote will be provided for authors with more than 4 pages of color. Please ensure that color figures and images submitted for publication will render clearly in black and white conversion for print.

Tables and Figures. Tables and figures (illustrations) should not be embedded in the text, but should be included as separate sheets or files. A short descriptive title should appear above each table with a clear legend and any footnotes suitably identified below. All units must be included. Figures should be completely labeled, taking into account necessary size reduction. Captions should be typed, double-spaced, on a separate sheet.

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Transgender Mental Health:

Testing the Minority Stress Model

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Abstract

Research shows that trans people experience poor mental health outcomes. The minority stress hypothesis suggests this is rooted in social processes such as discrimination. This cross-sectional study aimed to test this theory by exploring whether discrimination, negative expectations of future treatment, and internalised transphobia predicted depression, anxiety and stress among trans people; and whether functional social support moderated this relationship. Participants (N = 250) were recruited online and completed a survey. Results revealed high rates of depression, anxiety and stress, which were predicted by discrimination and internalised transphobia, but not negative expectations. The relationships were not moderated by functional social support. For support to buffer the impact of minority stress, it may need to be minority specific. Recommendations include working with individuals to reduce internalised transphobia, and working at a social level to effect change, as this is where these negative outcomes for trans people originate.

Keywords: transgender, minority stress, discrimination, transphobia, social support

Transgender Mental Health: Testing the Minority Stress Model

Over the past decade evidence has accrued highlighting substantially poorer mental health among transgender people in comparison with the general population (e.g., McNeil, Bailey, Ellis, Morton & Regan, 2012; Bauer, Scheim, Pyne, Travers & Hammond, 2015). For example, trans people experience very high rates of depression (Nemoto, Bedeker & Iwamoto, 2011; Boza & Nicholson Perry, 2014), anxiety (e.g., Budge, Rossman & Howard, 2014), stress (McNeil et al., 2012), substance misuse (Hepp, Kraemer, Schnyder, Miller & Delsignore, 2005; Benotsch et al., 2013), social phobia (e.g., Gomez-Gil, Trilla, Salamero, Godas & Valdes, 2009), disrupted eating behaviours (e.g., Vocks, Stahn, Loenser & Legenbauer, 2009), self-harm and suicide (e.g., Nemoto et al., 2011; Bailey, Ellis & McNeil, 2014; Boza & Nicholson Perry, 2014).

The Minority Stress Hypothesis (MSH), proposed by Meyer (1995; 2003) is gaining substantial empirical support as an explanation for these elevated rates. It suggests that people may experience negative mental health outcomes simply by belonging to a socially oppressed group, due to the *additional* stress that they experience over and above that experienced by those in socially dominant positions. In 2003, Meyer classified minority-specific sources of stress as being distal (i.e. external factors) or proximal (i.e. concerning the individual's internal processes) stressors. Meyer proposed the distal stressors were negative external experiences such as discrimination, victimisation and rejection. A further distal stressor specific to trans people, that of non-affirmation of identity, was added by Testa, Habarth, Peta, Balsam and Bockting (2015). Meyer's proximal stressors included internalised negative social messages (e.g., internalised transphobia), negative expectations of future treatment, and concealment of identity.

The concepts of concealment and non-affirmation have received little empirical attention so far; however more information exists in relation to negative external experiences, internalised social messages and expectations of poor treatment, which will be the focus of the current study.

Negative External Experiences

This aspect of minority stress has been studied in relation to wellbeing in a number of populations, and in particular among sexual minority groups (e.g., Almeida, Johnson, Corliss, Molnar & Azrael, 2009; Ryan & Rivers, 2003). High levels of overt discrimination have also been consistently identified in the trans literature (e.g., Bazargan & Galvan, 2012). Verbal assaults and harassment (e.g., Bauer, Pyne, Francino & Hammond, 2013; Boza & Nicholson Perry, 2014) and physical assaults (e.g., Nemoto et al., 2011) are a feature of many trans people's experiences. Equally, sexual assault and rape may be prevalent (e.g., Nemoto et al., 2011). Discrimination against trans people has been highlighted in many spheres of daily life; for example, at work or in social spaces (McNeil et al., 2012), and in healthcare settings generally, even in those specifically for trans clients (Ellis, Bailey & McNeil, 2015).

Importantly, evidence also suggests that these experiences do have a direct impact on mental health and wellbeing. For example negative external experiences (such as discrimination or violence) have been related to trans women's experiences of depression (e.g., Nemoto et al., 2011; Bazargan & Galvan, 2012; Nuttbrock et al., 2014), and associated with suicide among all trans people (Clements-Nolle, Marx & Katz, 2006; Goldblum et al., 2012). Bauer et al., (2015), calculating the potential proportion of suicidal ideation averted were all trans people to experience lower levels of transphobia, demonstrated that this significantly reduced the relative risk of suicidal ideation by 66%.

Negative Expectations of Future Treatment by Others

Many trans people fear negative encounters, however this fear may be distinct from reported experiences of discrimination, as the two are not necessarily correlated (Ellis, Bailey & McNeil, in press). The impact of these expectations however is substantial and may affect many areas of the individual's life, such as the places they will go to or the activities they may choose to undertake (Ellis, McNeil & Bailey, 2014), thus the expectation limits the choices and options that the person may have. In a minority stress context, these expectations and the changes in behaviour which they may lead to might therefore feasibly impact upon mental health.

Internalised Social Messages

Among lesbian and gay people the internalisation of negative social messages about one's sexual orientation (internalised homophobia), has been highlighted as relating to poor mental health in these groups (Williamson, 2000). In trans populations, internalised transphobia has been defined as the internalisation of "society's normative gender expectations" (p.1, Bockting, 2015). Singh, Hays and Watson's (2011) qualitative work found that a strong concept of self-worth emerged as a theme of resilience against such issues. Hendricks and Testa (2012) suggest that research such as this highlights similarities between internalised transphobia and homophobia, and that it is reasonable to assume that it may influence trans people's mental health and wellbeing.

Protective Factors

In addition to stressors, the MSH also suggests protective factors which may mitigate their impact. Meyer (2003) suggested that building a strong in-group identity (identity pride) and having appropriate support (such as with others with shared identities or experiences; referred to as community membership) could mitigate to some extent the impact of these negative minority stressors. Studies of sexual minority groups have indeed highlighted that

sexuality-related social support (from different social and familial sources) relates to positive wellbeing (e.g., Snapp, Watson, Russell, Diaz & Ryan, 2015), and that non-specific parental and social support moderates the impact of negative experiences on emotional distress (e.g., Antonio & Moleiro, 2015). In trans populations, low levels of receiving social support, having a greater need for it, and less satisfaction with the support received have been related to poor mental health among trans women (Nemoto et al., 2011). Similarly, low levels of functional social support (defined below) were associated with a significantly greater risk of suicide attempts among trans people (Bauer et al., 2013).

Seeking social support may be seen as a coping activity in itself and such coping may be used differently by those in minority groups than in majority positions, which may partly offer a mechanism for its mitigating effects. For example Goldbach and Gibbs (2015) highlight that lesbian, gay, bisexual, transgender and queer young people have to learn to cope with their experiences in different ways to some other groups, because they are not routinely raised by caregivers of the same minority status who can model coping for them. Thus social contacts and role models may be more important for trans people, a suggestion supported by evidence from Testa, Jimenez & Rankin (2014) who highlighted that exposure to other trans people at an early stage helped identity development and reduced fear, suicidality and enhanced comfort in trans people. Indeed, Meyer's (2003) model suggests that social support is most valuable as a buffer against minority stress when it occurs from other individuals with a shared minority identity or experience, as this fosters community membership and pride in ones' identity. However Snapp et al. (2015) demonstrated that different sources of support had slightly different impacts, with support from family members being the most beneficial. Similarly Bauer et al. (2013) highlighted that increased parental support for participants' gender identities related to both lower suicidal ideation and attempts. In a further study Bauer et al. (2015) found that among transgender Ontarians, social

inclusion in general and support from parents in relation to being trans substantially reduced suicide rates among the community. Therefore the role of social support as a buffer for minority stress factors may be more complex than Meyer suggested. Indeed, the evidence highlights that other forms of social support that are not specific to having a trans identity also have a significant role in the psychological wellbeing of trans people. Higher levels of general social support have been demonstrated among genderqueer people as predictive of lower depression and anxiety, even when controlling for coping styles (Budge et al., 2014), and as an independent predictor for depression (Boza & Nicholson Perry, 2014). Furthermore, Bauer et al. (2015) demonstrated that high levels of functional social support, unrelated to gender identity or trans status, reduced rates of suicidal ideation among trans people by 49% and suicide attempts by an additional 82%, suggesting that it independently impacted upon wellbeing. As general, non-trans-specific social support also appears to relate to trans mental health, in addition to trans-specific support, it may be that it is the role of social support in general which may be protective against the impact of minority stress, rather than social support which has a role in group-cohesion and identity-formation, as Meyer suggests. Thus it would be useful to explore this in further detail to clarify the potential role of social support and which type of support is important.

Bockting et al., (2013) tested some aspects of the MSH in trans people, including a role for social support. They found that both enacted and felt stigma (overt discrimination and perceptions of other's feelings towards trans people) were indeed associated with poor mental health, whilst peer support and family support (in addition to concealment-related variables) moderated this association. This study however had some methodological limitations, including the use of measures for peer and family support that were not well validated. They concluded that the minority stress model was a useful method for conceptualising trans

people's mental health, and the authors recommended further exploration of these relationships.

Therefore, this study aims to explore the suggested relationship between minority stressors and poor mental health, and the impact of social support on this relationship. In relation to social support, this study will explore a form which is unrelated to identity as part of a minority group; specifically functional social support, which Sherbourne and Stewart (1991) define as "the degree to which interpersonal relationships serve particular functions" (p.705). They specified those functions as emotional support, instrumental or tangible support, help to solve problems, support with self-appraisal and companionship, all of which may be particularly important for further examination within trans populations. The minority stressors studied herein will be those for which the available literature (discussed above) has suggested a relationship and include discrimination as a distal stressor and internalised transphobia and expectations of poor treatment as proximal stressors. Existing literature has heavily focussed on distal stressors with less focus on proximal stressors (Effrig, Bieschke & Locke, 2011) and hence this study intends to expand the available evidence-base for these variables. Non-affirmation and concealment have not been included due to the added complexities involved in their measurement in trans groups (e.g., Hendricks & Testa, 2012) and a lack validated measures.

To summarise, this study aims to test a hypothesis suggested by the MSH, that social support will moderate the relationship between minority group stressors and poor mental health outcomes, such that higher social support will reduce the negative impact of stressors on mental health. It will do so specifically by:

- Measuring trans people's mental health: levels of stress, anxiety and depression.

- Establishing whether discrimination, expectations of poor treatment and internalised transphobia are related to trans people's mental health.
- Establishing whether such a relationship can be moderated by functional social support.

Method

Participants

In total 420 participants started the survey. Of those, 170 either left the survey blank, were duplicates, did not complete the psychometric measures, or had a substantial amount of missing data (see analysis section), and were omitted. Thus the final sample size was 250 participants, for whom demographic details can be seen in Table 1. The majority (235) reported that their gender identity was different from the gender typically associated with the sex they were assigned at birth. The participants embodied a range of gender identities, which can be seen in Table A1[1], with addition qualitative information relating to transition status, sexual orientation and relationship status in Table A2. Full descriptive tables can be seen in Appendix A.

Insert Table 1 here

As can be seen in Table 1, most participants were either planning to undergo, were undergoing, or had undergone some kind of transition process (86%). Most participants (83%) felt their body and gender did not match. They reported high levels of dissatisfaction or unhappiness with the difference between their gender and appearance, highlighting that being seen as the gender they were was extremely important (see Figures A1 and A2).

Very few participants reported that they were heterosexual (21%), with the majority inhabiting multiple sexual orientation identities (Table 1; Table A2). Around half the participants were currently single (48%). Participant ages ranged from 18 to 78 with the mean age being 33 (Table A3).

Most participants were living in the UK (64%), and America (11%). A further 22% were from other European countries with the remainder representing other locations (Table A4). Participants were asked their ethnic group using a UK census question. Just over half (59%) were White English/Welsh/Scottish/Northern Irish/British, with a further 31% representing other White backgrounds. Other groups were varied with the largest being mixed/multiple background (4%) (see Table A5). Most participants (71%) reported having no religion or faith (see Table A6).

Participants were asked for details of their qualifications and employment, with 46% completing a Bachelor's Degree or equivalent or higher qualification (see Table A7). Despite these high levels of qualifications, only 28% were in full-time employment with a further 30% in part-time employment or working as self-employed (Table A8). A total of 60% of participants earned less than £15,000 per annum, prior to tax and other deductions, with 23% earning below £5,000 (see Table A9).

Design

The study was a within-participants cross-sectional study. Participants completed an online questionnaire comprised of measures to test various minority stress factors. The predictor minority stress variables were discrimination, anticipated or expected negative events, and internalised transphobia. The outcome variables were depression, anxiety and stress. The moderating variable was functional social support, which was expected to moderate all of the predictor variables, according to the minority stress hypothesis. The

moderation analyses were computed whilst controlling for relevant demographic and trans-specific factors (see analysis section).

Materials

The three predictor variables were discrimination, negative expectations and internalised transphobia. Discrimination was measured using the Transgender Stigma Scale, Discrimination sub-scale (α = .90; Mizock & Mueser, 2014). Expectation of negative events and internalised transphobia were measured using the 9-item Negative Expectation subscale (α = .89), and the 8-item internalised transphobia subscale (α = .91), of the Gender Minority Stress and Resilience Measure (Testa, Habarth, Peta, Balsam & Bockting, 2015).

The outcome variables were measured with the Depression Anxiety Stress Scales (DASS) 21-item version (α (depression subscale) = 0.91, (anxiety subscale) = 0.84, (stress subscale) = 0.90; Lovibond & Lovibond, 1995).

The moderating variable was measured using the 19-item Medical Outcomes Study Social Support Survey (MOS-SSS; Sherbourne & Stewart, 1991; α = .97). The overall score was the primary measure used in the moderation.

Data were collected pertaining to a number of demographic, trans-related and psychological variables (see Ethics Section of thesis[2]). Those specifically related to this study, testing aspects of the MSH, will be presented and explored here. The other variables were collected in relation to additional research which will extend this study, and this analysis will be undertaken at a later date and presented elsewhere.

Demographic variables relevant to this study were ethnicity, sexual orientation, income, education, employment, religion, relationship status, and age. These were asked directly of participants.

A number of trans-specific variables were also explored for the purposes of this study. Gender identity was established by asking participants first whether their current gender was different to that typically associated with the sex they were assigned at birth. They were then offered a list of different identities and if they wished, they could select any that applied to them or provide additional categories. Participants were also asked whether they had a constant/clear identity as a man, a woman, as consistently non-binary, or as having a variable or fluid non-binary identity. They could also select no gender identity, or say if they were unsure. Transition and gender reassignment were also explored, and were loosely defined as 'any part of a personal, social, and sometimes medical or surgical, process by which you have changed the way you express your gender', in order to reflect the different ways participants may make changes in their lives. Transition stage was established by asking participants whether they had or had not wanted to undergo a process of transition, if they were undergoing one, or if they had undergone such a process. The degree to which participants' bodies matched their gender was measured using a 10 point Likert-scale, as was the importance of having their gender recognised by others.

As with previous research (e.g., Bockting et al., 2015), it was intended that where demographic and trans-specific variables correlated with the outcome measures, they would be included in the models as variables to be controlled for when a potential relationship with the outcome variables was indicated in the literature.

All the measures for the predictor, outcome and moderating variables above were either freely available, or held under license by the university. Data collection comprised of an online survey incorporating these measures and designed using Qualtrics software, version 60939 (www.qualtrics.com/).

Ethical Considerations

This study has been reviewed by the Faculty of Health and Medicine Research Ethics Committee, and approved by the University Research Ethics Committee at Lancaster University.

Procedure

Information for participants was disseminated to organisations working with trans people across the UK and in other European countries, which were also provided with a brief social media statement to use with their social media sites (see Ethics Section of the thesis, Appendices A and B). Participants who took part in the Trans Mental Health Study (McNeil et al., 2012) and who opted to provide contact details to take part in further research were also contacted and provided with the participant information. Participant information provided brief details of the aims and scope of the study, and details of the researcher. Organisations were also informed that the researcher could visit them to discuss the research if requested, although none did so.

The participant information contained a link to the online survey, which brought participants to a welcome page (Ethics Section, Appendix D). This reiterated the study information and its aims, in addition to what taking part would entail. They were again given details of the researcher before having the potential uses of their data explained and being asked to provide consent. It was not possible to continue without providing consent, as participants would otherwise be re-directed to a 'thank you' page (Ethics Section, Appendix E). The participant materials and the survey were evaluated for acceptability by a national organisation working with trans communities. Following a consent page, participants entered the survey, which it was anticipated would require between 20-30 minutes to complete (Ethics Section, Appendix C). After completing the survey a debriefing page appeared (Ethics Section, Appendix F).

Analysis

Once downloaded, the data were checked to ensure that it met the statistical assumptions required for analysis. In line with suggestions by Field (2009), 19 participants with a substantial amount of missing data across multiple measures were deleted. Those with only one item missing on a subscale (21 participants) or less than 10% missing data (1 participant) had their missing data points corrected using mean substitution (Cohen & Cohen, 1983). Assumptions of normality appropriate for a regression were checked and advice sought from a specialist statistician in relation to all analyses. All data were deemed acceptable in relation to these assumptions.

In relation to the predictor, moderator and outcome measures, the participants in this sample were compared to other available data using Independent samples T-tests using SPSS. Following this, correlations were conducted to establish which variables correlated with the outcome variables. For those variables theoretically related to the outcomes but which were categorical (stage of transition and gender identity), dummy coding was used to enable them to be processed as binary variables.

Any variable correlating with an outcome variable above $p \leq .01$ was then included in a hierarchical regression. Although a formal Bonferroni correction was not applied, this more stringent cut-off than the usual $\leq .05$ was selected to correct for the high number of correlations conducted and avoid a Type I error (see Dahiru, 2008, for discussion). Hierarchical multiple regressions were then conducted to explore which factors were uniquely associated with the outcome variables. At Step One, general demographic variables which correlated significantly with each outcome variable were entered, followed at Step Two by trans-specific variables. At Step Three, the predictor variables were added to the models. For all regressions, each analysis was checked to ensure that the required assumptions were met. Inspection of P-P and histogram plots indicated that the standardised residuals were normally distributed. There were no concerns regarding heteroscedasticity, or

multicollinearity; tolerance values were more than 0.1, and Variance Inflation Factor values were less than 10. The data were also checked for unusual influential cases. Less than 5% of cases were outside of two standard deviations, with very few being outside of three; the cut-offs recommended by Field (2009). As such no influential cases were detected. Similarly, Cook's Distance values were all lower than 1. Moderations were conducted using Hayes PROCESS tool (available from http://processmacro.org/download.html; Hayes, 2013). The predictor and moderator variables were mean centred as recommended by Aiken and West (1991). Three models were tested as outlined below, to explore whether social support moderated each of the predictor variables in the different models (Figure 1).

Results

Descriptive Statistics

Insert Table 2 here

Predictor variables

On these measures higher scores indicated greater levels of discrimination, internalised transphobia, and anticipation of future negative experiences. The mean for discrimination was similar to that published by Mizock and Mueser (2014) in their study with 55 participants (M = 2.89), however they reported insufficient data to determine whether this difference was significant. This sample had significantly higher internalised transphobia (M = 15.5) than that reported by Testa et al. (2015) (M = 13.2, $t(1092) = 3.62$, $p < .01$), but did not differ significantly in relation to negative expectations (M = 21.4, $t(1092) = -.89$, $p = .37$).

Moderating variable

Higher scores on the MOSS indicated greater levels of social support. In the original study published by Sherbourne and Stewart (1991), their sample tended to be

skewed toward having greater levels of social support (M = 70.1). When comparing this sample to theirs, participants here had significantly lower social support (M = 54.8, $t(3235) = -9.53$, $p < .01$).

Outcome variables

When considering the outcome variables, it is important to view these scores in relation to their cut-off criteria. When using the DASS-21 to categorise participants by severity, it was clear that these participants had difficulties in relation to these outcomes (Table 3).

Insert Table 3 here

Over half the participants had at least moderate depression (66%), moderate anxiety (56%) and just under half experience moderate stress (48%). Relatively few fell within the 'normal' range for depression (27%), anxiety (34%) and stress (39%). In comparison, among a large non-clinical sample (of presumably cis people, although this is unreported) most participants fell within the 'normal' range of scores for depression (81.7%), anxiety (94.4%) and stress (80.2%) (Crawford & Henry, 2003). Indeed these participants experienced significantly worse depression ($t(2019) = 23.53$, $p < .01$), anxiety ($t(2019) = 21.32$, $p < .01$), and stress ($t(2019) = 17.16$, $p < .01$).

Correlations

Correlations were computed using the Pearson statistic. As shown in Table 4, all predictor variables and the moderating variable correlated significantly with the outcome variables, at the level of $p < .01$.

Insert Table 4 here

Overall the results showed that higher levels of discrimination, internalised transphobia and negative expectations, and lower levels of social support did relate to higher levels of depression, anxiety and stress, although the relationship between social support and stress and anxiety was relatively weak.

A number of variables were associated with depression. People who did not feel that their body physically matched their identity (r_s (250) = .32, p < .001), were of younger age (r_s (250) = -.31, p < .001), who had fewer qualifications (r_s (250) = -.23, p < .001), or were in a process of transition (r_s (250) = .17, p = .009) were significantly more likely to indicate higher levels of depression. Having completed transition (r_s (250) = -.26, p < .001) related to lower levels of depression.

Higher levels of anxiety were present in those who felt that their body did not match their identity (r_s (250) = .22, p < .001), were younger (r_s (250) = -.49, p < .001), and who were proposing to undergo (r_s (250) = .17, p = .007), or were in the process of undergoing (r_s (250) = .18, p = .003) transition. Lower levels of anxiety were again associated with having completed transition (r_s (250) = -.27, p < .001).

For stress, higher scores were associated with feeling that the participant's physical body did not match their identity (r_s (250) = .28, p < .001), younger age (r_s (250) = -.39, p < .001), and being in the process of transition (r_s (250) = .16, p = .009). As previously, having undergone transition was associated with significantly lower levels of stress (r_s (250) = -.24, p < .001).

Regressions

Hierarchical regressions were used to establish the relationship between predictor and outcome variables.

Insert Table 5 here

The addition of the minority stress predictor variables at Step Three consistently enhanced the predictive power of the models, evidencing a significant addition to the variance explained in comparison with previous steps (Table 5). Overall the models accounted for 33.1% of the variance in depression ($p < .001$), 33.9% of the variance in anxiety ($p < .001$), and 28.8% of the variance in stress ($p < .001$).

Insert Table 6 here

Table 6 provides details of each regression analysis undertaken, and their individual steps. With depression as the dependent variable, in the final step, age stopped being significantly associated with depression, whereas a lower level of qualifications ($\beta = -.14$, $p = .02$), fewer feelings that one's body matched one's identity ($\beta = .13$, $p = .03$), greater discrimination ($\beta = .18$, $p = .01$) and greater internalised transphobia ($\beta = .30$, $p < .001$) were associated with higher depression scores.

When anxiety was the dependent variable, younger age ($\beta = -.35$, $p < .001$), greater discrimination ($\beta = .19$, $p = .01$) and greater internalised transphobia ($\beta = .16$, $p = .01$) were significantly associated with higher anxiety scores.

In the final model, with stress as the outcome, younger age ($\beta = -.22$, $p < .001$), fewer feelings that one's body matched one's identity ($\beta = .13$, $p = .04$), greater discrimination ($\beta =$

.15, p = .04) and greater internalised transphobia (β = .20, p = .003) attained significance in their associations with higher stress scores.

Moderation Analyses

Following from the regressions, moderation analyses were undertaken to explore the interaction between each predictor variable (internalised transphobia, negative expectations, and discrimination), and the moderator (social support) on the outcome variables (Table 7; for an example SPSS output see Appendix B).

Insert Table 7 here

For depression, the moderation analyses failed to achieve significance, thus social support did not moderate the impact of discrimination (b = .41, t(239) = .59, p = .56), internalised transphobia (b = -.01, t(239) = -.07, p = .94), or negative expectations (b = -.02, t(239) = -.20, p = .84) on depression.

For anxiety, again the moderations failed to achieve significance. Social support did not moderate the impact of discrimination (b = -.02, t(239) = -.03, p = .98), internalised transphobia (b = -.07, t(239) = -1.17, p = .24), or negative expectations (b = -.11, t(239) = -1.69, p = .09) on anxiety.

Finally for stress, as before, moderation analyses failed to achieve significance, demonstrating that social support did not moderate the impact of discrimination (b = .56, t(240) = .75, p = .45), internalised transphobia (b = -.05, t(240) = -.81, p = .42), or negative expectations (b = -.05, t(240) = -.67, p = .51) on stress scores.

Discussion

Summary of Results

The results of this study highlighted high levels of depression, anxiety and stress among the participants, consistent with previous research from the UK (e.g., McNeil et al., 2012) and elsewhere (e.g., Bauer et al., 2015; Bockting et al., 2013; Budge et al., 2013). Indeed the participants demonstrated significantly higher levels of distress than in a large non-clinical sample (Crawford & Henry, 2003). As suggested by the MSH, the stressors of discrimination, negative expectations of poor treatment, and internalised transphobia were significantly related to these negative mental health outcomes. Again this was consistent with findings from previous research (e.g., Irwin, Coleman, Fisher & Marasco, 2014).

Models of predictors of depression, anxiety and stress were explored using the minority stress hypothesis as the basis. These models highlighted that discrimination and internalised transphobia did have a role in predicting depression, anxiety and stress, even when certain demographics and trans-specific factors were controlled for in the models.

Internalised transphobia and discrimination emerged as strong predictors of depression, anxiety and stress. Unexpectedly however, negative expectations failed to achieve significance, despite having initially correlated with all three outcomes. On exploration of the original measures used, there may be some overlap between the constructs explored by the discrimination and negative expectations measures. This is further suggested by the strong correlation between the two ($r = .631$, $p < .001$). Interestingly, Testa et al. (2015) may offer an explanation for this, as they suggest that not only do proximal and distal factors independently affect negative outcomes, but that proximal factors may also mediate the impact of the distal factors. Similarly, Breslow et al. (2015) highlighted that internalised transphobia (another proximal measure) may also be a mediator of the relationship between

discrimination and distress. Future studies would benefit from exploring the relative impact of proximal factors as direct stressors versus mediating or moderating variables.

Moderation

Although social support was related to depression, anxiety and stress (as indicated by past research e.g., Moody & Smith, 2013), it did not moderate the relationships between these outcomes and experiences of discrimination, internalised transphobia, or negative expectations. Previous research has highlighted the importance of some forms of social support for trans people's mental well-being (e.g., Davey, Bourman, Arcelus & Meyer, 2014), and indeed has demonstrated that it does moderate the relationship between minority stressors and poor mental health outcomes (e.g., Bockting et al., 2013), thus the results herein warrant further exploration.

Type of social support studied

One explanation for the lack of moderation may relate to the type of social support studied here. This study used the MOS-SSS as its measure, which collates different types of functional support into an overall score, none of which are minority or discrimination specific. Previous research has tended to focus on aspects such as peer support or family support (e.g., Bockting et al., 2013), and often in relation to specific support for the person's gender (e.g., Bauer et al., 2015). Peer support may help to foster a robust sense of in-group identity which has been posited as protective in minority stress theory (e.g., Hendricks & Testa, 2012), and similarly family support may enhance feelings of belongingness which potentially protect against some of the negative messages that trans people may receive socially (e.g., Bauer et al., 2015). Thus the type of social support and whether it is specific to the person's gender, which is also related to the source of discrimination and oppression in the MSH, may have great relevance here. This could be seen as an extension or adaptation of

Cohen and Wills (1985) Match Hypothesis, whereby the impact of social support as it pertains to protecting against stress, would be greatest when there is a match between what is needed from coping and the support available. In this case, it may be that the match needs to occur additionally between the source or form of stress and the social support available.

Support as a buffer or direct impact

Social support can be seen as a buffer between the impact of stress and negative health outcomes (the buffering hypothesis) or as having a direct impact on the outcomes themselves (the direct-effects hypothesis) (Thoits, 1982). The MSH is an adaptation of the stress buffering hypothesis, whereby the impact of minority stressors can be 'buffered' by protective resilience factors; in this case, social support. There is controversy surrounding the concept of social support as a buffer against stress in general. For example, some studies have found support for a direct effect of peer social support but not for any role as a buffer (e.g., Burton, Stice & Seeley, 2004), whereas others have demonstrated it does indeed function as a buffer (e.g., Yang et al., 2010). Further research has demonstrated that satisfaction with perceived social support has main, mediating and moderating effects on well-being (e.g., Beeble, Bybee, Sullivan & Adams, 2009). Additionally, having low levels of social support (as evidenced among this sample) may act as a stressor in itself (Thoits, 1995; Lepore, Evans & Schneider, 1991) further confounding the conclusions that may be drawn from this study.

Indeed, while research demonstrates that non-specific functional support and trans-specific support both predict mental health outcomes in trans people, its impact as a moderator appears to be more complex (as discussed above). Here, social support did correlate with the outcome variables, with higher levels relating to lower stress, depression and anxiety, even though it did not function as a moderator. In light of the available evidence, this suggests that non-specific social support, for trans people, may have a direct effect on

stress. Similarly, Sattler, Wagner and Christiansen (2016) suggested that the MSH requires modifying to focus on social support as having a direct rather than a buffering effect.

Differences between trans and cis LGB people

Much of the preceding literature concerning the role of social support as a moderator, and indeed the foundation of the MSH, comes from the LGB literature, however this may not be appropriate for informing models of trans-minority stress. Thoits (1995) highlighted three main types of stressors; major life events, chronic sources of ongoing stress, and general daily annoyances. While cis LGB people and trans people all experience chronic stress from institutional oppression and reduced opportunities, it may be that for trans people, their socio-political situation of having fewer rights than cis people (LGB or otherwise) may have a greater impact, as has been demonstrated in other groups (e.g., Russell & Richards, 2013). For some, embodying gender also renders them visible as trans, resulting in fewer opportunities (e.g., Ellis, McNeil & Bailey, 2014). Experiences such as transitioning can substantially interrupt career pathways, again impacting on economic choices and progression (e.g., Dietert & Dentice, 2009). In addition, many trans people experience high levels of abuse and harassment, and more general microaggressions (e.g., McNeil et al., 2012). In relation to major stressors, coming out can be a significant source of distress where it disrupts social, employment and familial structures. While this is also true for LGB cis people, they may not be out to all people, all the time. For those who may be visibly trans in some way, this is not possible (e.g., Dietert & Dentice, 2009). Finally, undergoing the stresses of gender affirmation interventions, with the assessments and surgical risks involved, could constitute a further life stress. As Thoits (1982) emphasised, life events may impact upon the availability of support or opportunities for access to different types, and transition may be a time when trans people face changes in these opportunities.

Thus it may not be suitable to draw assumptions about the interplay of various minority stress factors among trans people from those which affect cis people.

Therefore, this study may clarify the MSH by confirming that it is not simply the functional aspect of social support which may buffer the impact of negative events or experiences, rather other social processes such as group identity may be salient factors (e.g., relating to other trans people, or having a sense of belonging to a family group). As the evidence base highlights, social support in general (such as functional social support) may well be predictive of mental health in trans people (e.g., Bauer 2015; Boza & Perry, 2014), but other processes may be more important for protecting against minority stress events. Thus social support as a buffer in the minority stress model needs to be more specifically defined, while also acknowledging that some forms may have direct effects. However, the relationships appear complex and further study is required to elucidate the roles of particular types of support, the forms of support which are relevant, and the conditions under which they may or may not have an impact. As discussed here, this research should be focussed specifically on trans people who may have unique needs and experiences in terms of the stresses they face and the social support available to them.

Limitations and Future Research

There are important considerations to keep in mind when interpreting these findings. The sample size was relatively small for that needed to detect a moderate effect size in a moderation analysis, and as such it may not be possible to fully rule out functional social support as a moderating variable, although this is certainly indicated by the results and found consistently across the three outcome variables. A larger sample would support this conclusion. Additionally, there are other correlates of poor mental health among trans people which were not included in the model (e.g., because of small numbers in some groups). These

included variables such as gender identity and ethnicity. In future, fully including these variables would enhance the robustness of the models, and the conclusions drawn from them. In relation to this it would also be important to keep in mind that the sample was aggregated in terms of potentially important factors such as gender, sexual orientation and ethnicity; for example, the sample consisted primarily of White people, and the unique experiences of the small numbers of people from other racial backgrounds may have been lost in the conclusions that are drawn. Other research has highlighted that there may be important differences between members of these different groups in the relevance of factors such as social support (e.g., Nemoto, Bedeker & Iwamoto, 2011; Pflum et al., 2015), which it was not possible to explore here. This study also focussed on adults, however there is evidence that stressors may differ for young people (e.g., Goldbach & Gibbs, 2015), and thus it is important to avoid generalising to trans youth from these findings. Whilst the findings are consistent with conceptualisations of minority stress, in terms of the models tested the variables explored here did not consist of all minority stress variables. It would be useful for future research to test other variables in the model, in particular those which are newly emerging (e.g., non-affirmation; Testa et al., 2015).

All of the measures used in this study relied on self-report. There are inherent and well-documented sources of bias in self-report approaches, such as issues of social desirability (e.g., van de Mortel, 2008) and acquiescence bias (e.g., Podsakoff, MacKenzie, Lee & Podsakoff, 2003).

Finally, this study consisted of a convenience sample recruited via the internet, and was cross-sectional in design. Ideally, longitudinal research would be required to fully explore the relationships between these variables and enable firm conclusions about the direction of relationships such as that between internalised transphobia and depression. Other sampling methods designed for research with hard-to-reach minority groups, such as

respondent driven sampling, would also enhance the utility of the results (e.g., Bauer et al., 2015).

Recommendations

The findings here suggest that addressing discrimination, internalised transphobia, and enhancing social support for trans people may reduce the high levels of depression, anxiety and stress seen in these populations.

Social support, whilst not a moderating variable, consistently predicts mental health in trans people, particularly when related to feelings of cohesion in a social group (e.g., through family or peer support). Therefore enhancing trans people's opportunities for strong peer-peer interactions and family acceptance would support positive outcomes, in addition to enhancing access to social support more generally through interventions to improve understanding and acceptance (e.g., António & Moleiro, 2015).

Furthermore, discrimination is a significant predictor of poor mental health outcomes. Thus an important and valid psychological intervention would involve addressing the discrimination people experience in their daily lives, and its population-level causes. Matthews and Adams (2009) highlighted that social efforts to reduce prejudice and discrimination were essential for LGB people's well-being. They stated that three main strategies should be utilised to facilitate this; exposure to positive information about LGB people, facilitating contact with LGB people, and developing and utilising anti-discrimination policies and practices in arenas such as the workplace. The importance of having adequate and specific knowledge about, and skills in working with minority groups has been well-established and is readily applicable to work with trans people (e.g., Davies & Neale, 1996). Research has demonstrated that whilst contact with trans people does affect attitudes towards them (e.g., King, Winter & Webster, 2009), a more robust strategy is to facilitate positive

working relationships with people from socially oppressed groups (Stonewall, 2004). Living or working in environments where people experience social oppression through unequal legislation or policies, does indeed impact on well-being in many groups (e.g., Ragins & Cornwell, 2001; Russell & Richards, 2013) and as such require interventions which enhance policy and legislative equality. Additional to addressing discrimination at a structural systems level, interventions involving perpetrators to understand their motivations and the origins of prejudice, may further inform opportunities for addressing discrimination in those who perpetuate it (Ryan & Rivers, 2003). Working to reduce discrimination at a social level using these strategies would form an important component in enhancing trans people's well-being.

Internalised transphobia emerged as a potential target for individual therapeutic work to address the process of internalisation of negative social messages. Strategies exist which psychologists can make use of to address these internalised social attitudes and beliefs. For example, Savage, Harley and Nowak (2005) highlighted how social empowerment can be used in therapeutic contexts to support LGB people to recognise and value their identities, enabling a more accurate perspective on being a LGB person. Such an approach empowers people to "respond to a unified socio-political system" (p. 135), and could readily be adapted for work with trans people.

A potential limitation of the MSH is that it suggests such stressors have an impact because the individual cannot enhance their coping to match the demands of the stressor (Effrig et al., 2011); again suggesting individual adaptation and support in this process would be beneficial. However while factors such as internalised transphobia may be amenable to psychological interventions on an individual level, the actual cause is social, with social change being necessary to improve the psychological wellbeing of transgender people. For example, Meyer (2015) highlighted how attributes which are often perceived as individual

characteristics (e.g., resilience) may be partly socially determined, as not all individuals have the same opportunities to develop these capacities.

While necessary to address factors at these multiple levels, as psychologists it is essential to avoid adding to the minority stress burden in our therapeutic practice. Hendricks and Testa (2012) suggest that increasing understanding of trans identities and experiences, and providing culturally competent assessment and treatment are essential steps towards achieving this. Cultural competency (see Sue et al., 1982; Sue, Arredondo & McDavis, 1992) is vital for ensuring that trans people are protected from negative outcomes. For example in healthcare contexts failing to recognise someone's minority history or identity, or to include such factors in assessment and formulation processes, may lead to inappropriate interventions (e.g., Bauer et al., 2009; Cowie & Rivers, 2000; Daniel et al., 2004; Richmond, Burnes & Carroll, 2012). As psychologists, the need to fully consider and understand the contribution of minority identity or experience to clients' lives is emphasised both within professional guidance (British Psychological Society (BPS), 2012), and as part of professional competencies on which our chartered status relies (Health Care Professions Council, 2012). Thus we must ensure we have the skills and ability to work with trans clients; to understand the impact of social oppression upon them, and provide a thorough service which meets our professional and legal duties. Clinical psychology training programmes may have a role here in ensuring that those teaching on them feel competent in their skills (Daiches & Smith, 2012), and are able to impart culturally competent training to their trainees, in line with BPS Requirements (BPS, 2014).

Conclusion

This study highlighted high levels of distress among trans people, which were related to discrimination, negative expectations and internalised transphobia. Only discrimination

and internalised transphobia predicted depression, anxiety and stress; and functional social support failed to moderate any relationships between these predictors and the outcomes.

The findings here support a number of avenues for intervention in order to attenuate the impact of belonging to a socially oppressed group on trans people's mental health and well-being. These may involve working at an individual level, however structural social change is also a valid and useful target for psychological intervention. As clinicians, researchers and policy makers, with access to and understanding of the wide range of psychological theories of change available, psychologists have an opportunity to effect change at multiple structural levels. Attempting to do so would form an essential part of improving mental health for trans people and reducing the social burden that these marginalised populations face.

In light of the findings explored here, the Minority Stress Hypothesis does provide a useful structure for conceptualising the additional stressors that trans people experience, and further research is required to fully explore the relative impact of its components.

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Footnotes

[1] Supplementary material including additional tables are included in an appendix and these tables are labelled A1, A2 and so on.

[2] All material is included here for the purpose of viva examination; however some may be withheld from the final open access version due to issues of copyright or confidentiality.

Tables

Table 1

Demographics (N = 250)

	%	n
Is your current gender identity different from the gender typically associated with the sex assigned at birth?		
Yes	94	235
No	2	4
Unsure	4	11
Gender identity category		
Constant/clear identity as a woman	24	59
Constant/clear identity as a man	37	93
Constant/clear non-binary identity	12	30
Variable/fluid non-binary identity	13	32
No gender identity	3	8
Unsure	5	12
Other	6	16
Transition		
I have not undergone and do not plan to undergo gender reassignment or transition	4	10
I am proposing to undergo gender reassignment or transition	15	38
I am currently undergoing gender reassignment or transition	33	83
I have undergone gender reassignment or transition	37	93
Unsure	6	15
Other:	4	11
Does your physical body wholly match your gender?		
Yes	17	42
No	83	208
Sexual orientation		
Bisexual	38	95
Lesbian	14	35
Gay	18	44
Asexual	13	33
Pansexual	29	72

	%	n
Sexual orientation continued		
BDSM/kink	19	48
Polyamorous	19	48
Queer	40	100
Straight	13	32
Heterosexual	8	21
Don't define	13	33
Not sure/questioning	13	32
Other:	15	38
Relationship status		
Single and not seeking relationship	28	69
Single and seeking relationship	20	50
Celibate	0	1
Monogamous relationship	33	82
Non-monogamous relationship	3	8
Polyamorous relationship (with only one current partner)	5	13
Polyamorous relationship (with multiple partners)	5	12
Other:	6	15

Table 2

Descriptive Statistics for the Study Measures (N = 250)

	M	*SD*	Range	LLCI (95%)	ULCI (95%)
Predictor					
Discrimination	2.35	.75	4.00	2.26	2.44
Internalised Transphobia	15.52	8.90	32.00	14.42	16.63
Negative Expectations	21.40	7.14	36.00	20.51	22.29
Moderator					
Social Support	3.19	1.03	4.00	3.06	3.32
Outcome					
Depression	18.60	12.19	42.00	17.08	20.12
Anxiety	12.27	9.48	40.00	11.09	13.45
Stress	19.04	10.77	42.00	17.70	20.38

Note: LLCI refers to Lower Limit Confidence Interval; ULCI refers to Upper Limit Confidence Interval.

Table 3

Participants in Each Clinical Banding for Depression, Anxiety and Stress (N = 250)

	Depression		Anxiety		Stress	
	n	%	n	%	n	%
Normal	68	27	86	34	97	39
Mild	18	7	21	9	32	13
Moderate	68	27	52	21	47	19
Severe	28	11	29	12	43	17
Extremely severe	68	27	59	24	31	12

Table 4

Key correlations (N = 250)

	Depression	Anxiety	Stress
Depression	1	.550**	.666**
Anxiety	.550**	1	.730**
Stress	.666**	.730**	1
Discrimination	.345**	.337**	.332**
Internalised Transphobia	.486**	.393**	.413**
Negative Expectations	.372**	.346**	.378**
Social Support	-.436**	-.175**	-.277**
Do you feel your physical body wholly matches your gender identity?	.318**	.223**	.284**
How important is it that others see you as the gender you identify as?	.044	-.014	.065
Age	-.312**	-.488**	-.387**
Religion or faith	-.137*	-.030	-.086
Qualifications	-.233**	-.154*	-.157*
Income	-.158*	-.102	-.101
Gender – Male	.072	.106	.090
Gender – Non-Binary	-.040	.104	.150*
Gender – Variable	-.054	.017	-.017
Gender – None	-.039	-.029	-.094
Gender - Unsure	.146*	-.026	.006
Gen - Other	-.008	-.021	.002
Transition – Proposing	.111	.172**	.146*
Transition – Undergoing	.165**	.184**	.164**
Transition – Complete	-.258**	-.269**	-.235**
Transition – Unsure	.084	.057	.054
Transition – Other	.057	-.085	.001

Note: A gender option of female was available, which has formed the comparison variable for the gender options above as part of the dummy coding process. **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

Table 5

Regression Change Statistics

Outcome	Step	R^2	*Adjusted* R^2	ΔR^2 change	Sig. of change	
					F	*p*
Depression	1	.13	.12	.13	18.39	< .001
	2	.18	.17	.05	5.34	.001
	3	.33	.31	.15	17.68	< .001
Anxiety	1	.24	.24	.24	77.46	< .001
	2	.26	.25	.02	1.99	.098
	3	.34	.32	.08	9.30	< .001
Stress	1	.15	.15	.15	43.64	< .001
	2	.19	.18	.04	3.96	.009
	3	.29	.27	.10	11.19	< .001

Note: See Table 6 for variables entered at each step

Table 6

Multiple Hierarchical Regression Steps

	Step 1			Step 2			Step 3		
	B (SE)	*β*	*t*	*B* (SE)	*β*	*t*	*B* (SE)	*β*	*t*
Depression									
Age	-.247 (.053)	-.279	-4.620***	-.183 (.056)	-.207	-3.257***	-.075 (.054)	-.085	-1.398
Qualification	-.998 (.328)	-.183	-3.040**	-.789 (.325)	-.145	-2.430*	-.733 (.298)	-.135	-2.461*
Body matching identity				6.897 (2.087)	.212	3.305***	4.369 (1.936)	.134	2.257*
Undergoing transition				.345 (1.781)	.013	.194	1.010 (1.635)	.039	.618
Completed transition				-1.50 (1.913)	-.060	-.784	-.135 (1.807)	-.005	-.075
Discrimination							2.881 (1.120)	.178	2.571*
Internalised transphobia							.413 (.091)	.301	4.550***
Negative expectations							.066 (.130)	.039	.510
Anxiety									
Age	-.336 (.038)	-.488	-8.801***	-.296 (.042)	-.430	-7.126***	-.237 (.041)	-.345	-5.724***
Body matching identity				2.053 (1.535)	.081	1.337	.740 (1.490)	.029	.497
Proposing to transition				3.323 (1.928)	.126	1.723	3.246 (1.841)	.123	1.763
Undergoing transition				2.464 (1.651)	.123	1.492	2.674 (1.584)	.133	1.688
Completed transition				.742 (1.685)	.038	.440	1.059 (1.647)	.054	.643
Discrimination							2.427 (.866)	.193	2.802**
Internalised transphobia							.174 (.070)	.163	2.488*
Negative expectations							.014 (.100)	.011	.141

	Step 1			Step 2			Step 3		
	B (SE)	*β*	*t*	*B* (SE)	*β*	*t*	*B* (SE)	*β*	*t*
				Stress					
Age	-.303 (.046)	-.387	-6.606***	-.256 (.049)	-.327	-5.208***	-.174 (.048)	-.223	-3.596***
Body matching identity				5.447 (1.822)	.190	2.989**	3.604 (1.751)	.125	2.058*
Undergoing transition				.781 (1.565)	.034	.499	1.290 (1.486)	.057	.868
Completed transition				-.283 (1.679)	-.013	-.169	.594 (1.643)	.027	.361
Discrimination							2.107 (1.019)	.147	2.068*
Internalised transphobia							.244 (.082)	.201	2.969**
Negative expectations							.123 (.118)	.081	1.043

*$p \leq .05$; **$p \leq .01$; ***$p \leq .001$

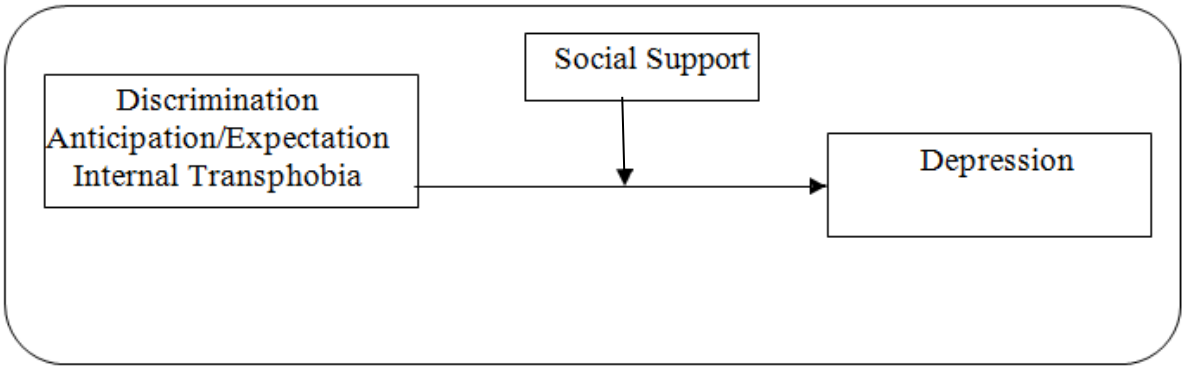
Table 7

Moderation statistics

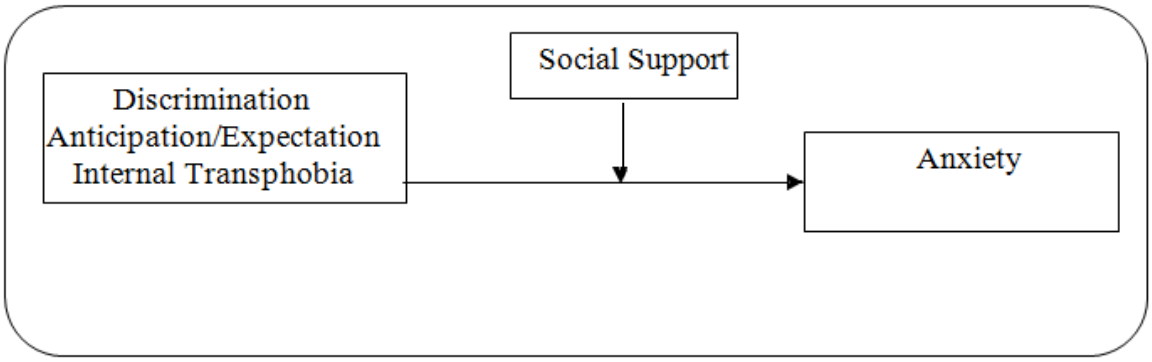
Outcome	Predictor	R	R^2	ΔR^2	Sig. of change	
					F	p
Depression	Discrimination	.63	.40	.00	.34	.56
	Internalised Transphobia	.63	.40	.00	.01	.94
	Negative Expectations	.63	.40	.00	.04	.84
Anxiety	Discrimination	.59	.34	.00	.00	.98
	Internalised Transphobia	.59	.34	.00	1.37	.24
	Negative Expectations	.59	.34	.01	2.86	.09
Stress	Discrimination	.56	.31	.00	.57	.45
	Internalised Transphobia	.56	.31	.00	.65	.42
	Negative Expectations	.56	.31	.00	.44	.51

Figures

Model One:



Model Two:



Model Three:

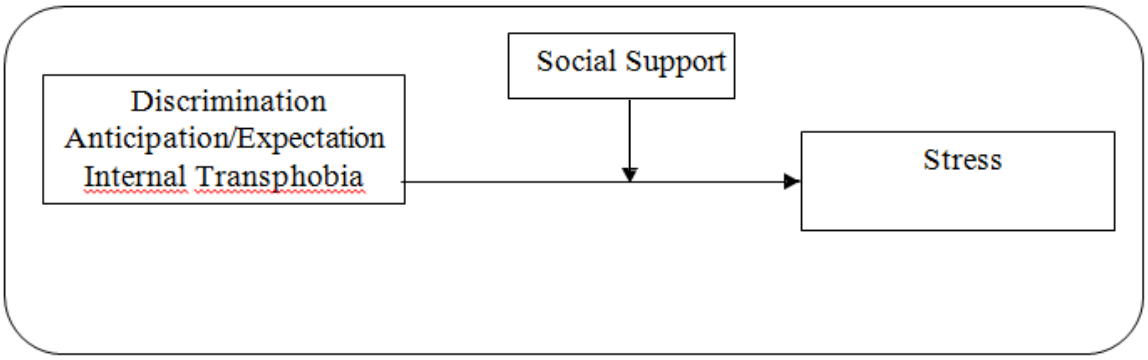


Figure One. Moderation models tested

Appendix A: Demographics

These appendices provide additional demographic material in the form of supplementary materials, and more detailed statistical outputs than that included in the empirical paper.

Table 1

Gender Identities

	%	n
Woman	29	72
Man	44	109
Woman with a transsexual history	16	40
Man with a transsexual history	19	48
Trans woman	20	51
Trans man	45	112
Trans person	41	102
Female-to-male (FtM) spectrum person	38	94
Male-to-female (MtF) spectrum person	15	38
Transgender person	65	163
Cross-dressing person	5	13
Transvestite person	2	5
Androgyne person	12	30
Bi-gender person	5	12
Gender neutral person	12	30
Genderqueer person	22	55
Neutrois person	4	11
Non-binary gender person	27	68
Non-gender or agender person	8	19
Intersex person	4	11
Bissu	-	-
Kathoey	-	-
Khusra	0	1
Kinnar	-	-
Other:	10	25

Table 2

Qualitative 'Other' Responses

Question	Responses to 'Other' option
Gender Identity	Genderfluid; Queer; Depending on context, I identify in different ways - I am complex, for I'm on the autism spectrum, am intellectually gifted, asexual, suffered decades of gender dysphoria (and have a mild intersex condition); FtX; Dog; I don't like having to define my identity in terms of gender in at all - I want to be free of gender; Maverique; Fluid, undetermined; Man with trans history (I dislike the word transsexual); Just human; Trans girl, as I do not feel I have earned womanhood; Genderflux; Hermaphrodite; Transmasculine; 'Androgynous' rather than 'androgyne person'; Fem man; Paragender - (Also I am unsure whether I am Intersex or not, never had the oppertunity to find out); Variable demigirl; A demi-guy, a demi-girl; Poly Gender; I would prefer not to use labels as they can be very divisive and not reflect an individual's right to express who they want to be on their own terms; Transfeminine.
Transition Status	I have undergone a process of transition and am not currently in transition but may re-start undergoing a transition if I decide to have further surgical procedures in future; I don't want to transition physically but I intend to change my first name, I use the title Mx & will ask for X gender on passports, GRCs etc when it becomes available; Want my gender marker on passport, birth certificate etc. to read X but this is not available to me; I propose to undergo reassignment treatment, but also obtained and self-medicated due to lack of support and long waiting list times; I have undergone and will continue to undergo a process of gender reassignment or transition; Possibly will attempt to access hormones, however have been told that this is rarely 'allowed' for non-binary people so likely to be unsuccessful - Yay for cis people getting to decide which trans identities are valid; I want to, but personal circumstances mean that I most likely never will; Top surgery; I had surgery to "cure" my intersex appearance as a child; I transition often. Not surgically but mentally, psychologically and in presentation; I want to socially transition to me, but there isn’t often the ability to be me, on paper. Im not prepared to pander to the requirements of the gics, they should want to pay to understand me; Am I undergoing or have I undergone?; And am also undergoing more surgery now.
Sexual Orientation	Ex-lesbian; (relationship) anarchist; romantically into women, mostly sexually into women but into guys sexually every once in a while; Nonmonogamous (but not polyamorous); Have answered pansexual and lesbian. This is because i feel attraction to any and all people, but would prefer to date someone who

Question	Responses to 'Other' option
	identifies as a woman; Kinky switch; I seem to fluctuate between homoflexible (mainly attracted to men and sometimes women) and heteroflexible (reversed); Femisexual- I'm attracted to folks who are feminine in some capacity; possibly demisexual rather than asexual - I can enjoy sex but don't experience much by way of sexual attraction and am not very interested in it; grey-asexual; It's changed over time. Now I am not attracted to people because of their sex or gender at all, but for who they are as a person and how they relate to me - Mostly I have no interest in sex at all anymore; I didn't answer other here but want to comment on previous question - You see it depends greatly on the context. At home alone or with close friends I'm totally happy with my body. its only when that body is misread by others in other spaces that I struggle. But then I try to place dysphoria with them not me - where dysphoria lives is an interesting question; fluid, undetermined; I use labels only to help others; Demisexual panromantic; I identify as "straight" to mean I'm a man attracted to feminine people, but I'm currently in a relationship with someone who is non-binary-identified and feminine presenting, so "straight" doesn't quite capture it; aromantic and somewhere on the asexual spectrum; non-monogamous; homosexual, biromantic; greysexual + greyromantic; Biromantic Asexual; There are multiple other ways of defining attraction other than gender centric. When you dig deep enough most people would have multiple labels and ultimately therefore no fixed labels; Aromantic; I identify as mosly maromantic (romantically attracted to men); demi sexual homoromantic; Demisexual Gynephilic; I experience attraction pansexually but unrelated mental illness prevents me acting sexually; Grey-asexual, panromantic; I'm feeling more for women than for men but I don't like the idea of sex. It's quite complicated to express what I feel; Auto erotic; Polysexual (attracted to many but not all gender identities); I am certainly not boxable in that respect, possibly Bi until proven otherwise, in practise now with women, but relating more to the soul than the body, had polyamorous time frames but it is not always easy and energy consuming and a risk for getting hurt; When I could only see myself in a relationship as a man the thought of intimate contact with women disgusted me because of how I had seen men treat women. I also felt like I couldn't be in any relationship besides friendship with other men because of fear of homophobic violence and I called myself asexual. Since I stopped seeing myself as a man and have become older I have begun to feel like romantic attraction to people is more possible, but I still find the thought of sexual contact unappealing.

Question	Responses to 'Other' option
Relationship Status	Married; Separated; In a relationship, but it's ending due to my gender. would love to meet someone who loves me for who I am, not what I am; In a queerplatonic asexual polyamorous relationship with two people, not seeking any other kind of relationship; Technically married, but not much of a relationship; single with blurry connections that define normative relationship language above; Single and involved with one person only but unable to actually BE in relationship due to circumstances; Single and not actively looking, but wouldn't mind a relationship if one came along; In the very early stages of a possible (monogamous) relationship; Me and my partner are currently on a break; divorced and not seeking relationship; Currently experiencing the recent death of my long term partner; single and seeking relationships of various kinds; Single and with no belief of achieving a relationship.

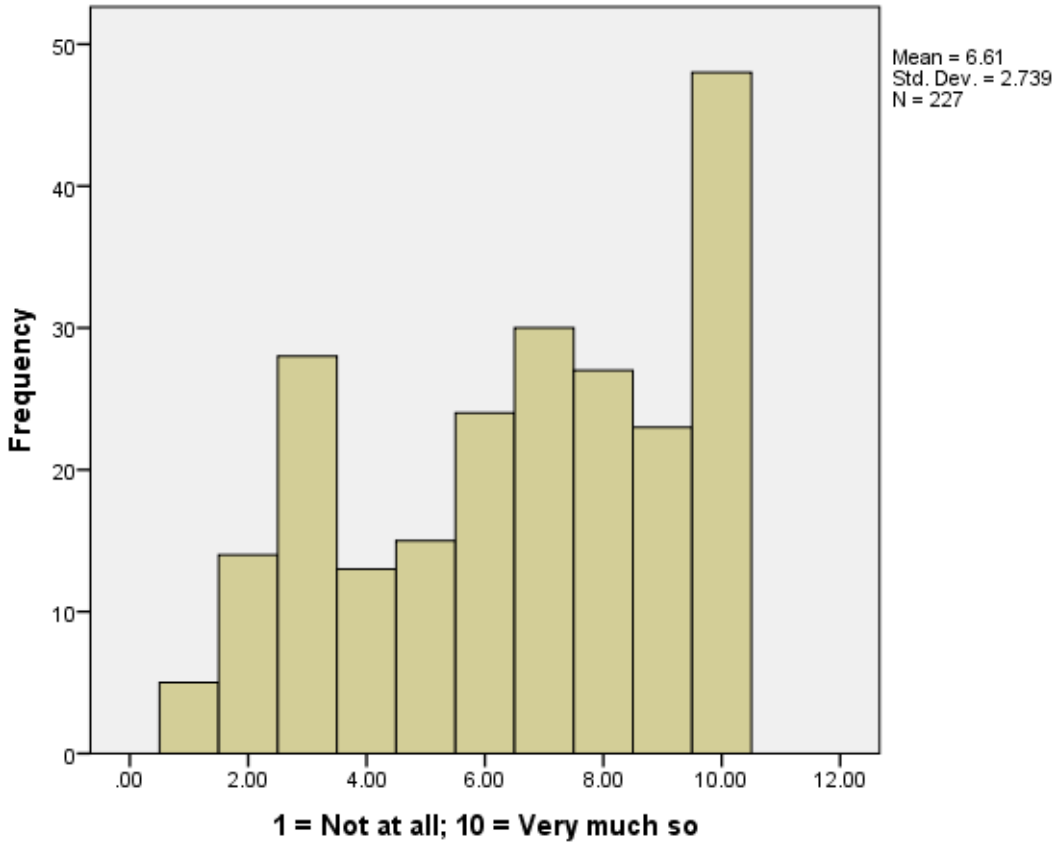


Figure 1(a): *How dissatisfied or unhappy are you with this difference between your gender identity and your body?*

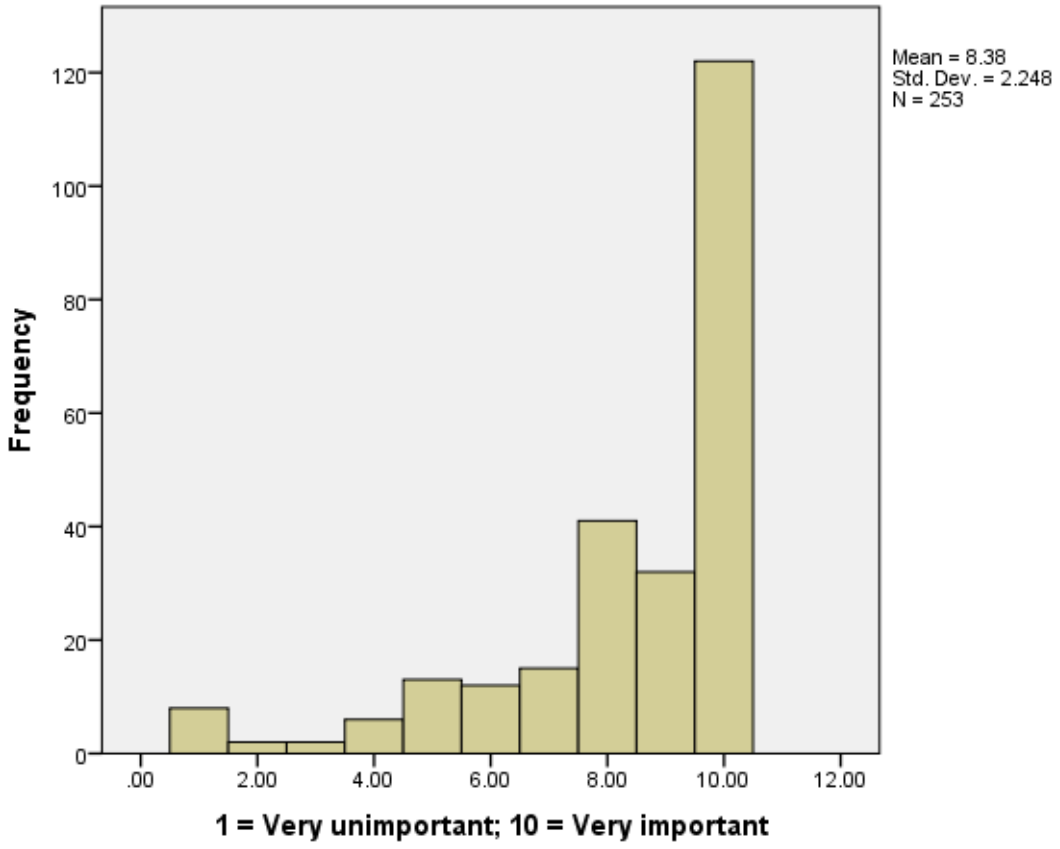


Figure 1 (b): *How important is it that others see you as the gender you identify as?*

Table 3

Age

Age	%	n
18-20	19.2	48
21-25	22	55
26-30	13.2	33
31-35	9.6	24
36-40	6.4	16
41-45	8	20
46-50	10	25
51-55	3.6	9
56-60	2.8	7
61-65	2.4	6
66-70	2	5
71-75	0.4	1
76-80	0.4	1

Table 4

Country of Residence

	n	%
Australia	1	.4
Austria	2	.8
Belgium	2	.8
Canada	1	.4
England	72	28.8
France	2	.8
Germany	2	.8
Hungary	1	.4
Ireland	19	7.6
Malta	1	.4
Netherlands	21	8.4
Norway	1	.4
Scotland	23	9.2
Sweden	3	1.2
Switzerland	2	.8
Thailand	1	.4
UK	62	24.8
US	28	11.2
USA and UK	1	.4
Wales	2	.8

Table 5

Ethnicity (n = 248)

	n	%
White English / Welsh / Scottish / Northern Irish / British	148	59.2
White Irish	20	8.0
Any other White background (please specify below)	58	23.2
Asian/Asian British	1	.4
Asian / Asian British: Indian	1	.4
Black / African / Caribbean / Black British	2	.8
Black / African / Caribbean / Black British: African	1	.4
White and Black Caribbean	1	.4
White and Asian	3	1.2
Any other Mixed / multiple ethnic background (please specify below)	9	3.6
Any other ethnic group (please specify below)	4	1.6

Table 6

Religion or Belief (n = 249)

	n	%
I have no religion or faith	178	71.2
I have a religion/faith or combination of religions or faiths (please specify):	71	28.4
Paganism; Agnosticism; Spiritualism; Wiccan; Judaism; Quaker; Shinto; Atheism; Christianity; Buddhism; Pantheism; Numerology; Anti theism; Feminist Pantheistc Goddess Preistess; Taoism; Unitarian Universalism; Islam; Buddhism and Paganism; Christianity and Paganism		

Table 7

Qualifications

	n	%
No qualifications	11	4.4
GCSEs, Scottish Standard Grades or equivalent (e.g., Functional Skills, BTEC or NVQ Levels 1 or 2)	25	10.0
A-Levels, Scottish Highers or equivalent (e.g., International Baccalaureate, BTEC or NVQ Level 3)	43	17..2
Certificate of Higher Education or equivalent (e.g., BTEC Professional Award, HNC, NVQ Level 4)	11	4.4
Diploma of Higher Education or equivalent (e.g., HND, Foundation Degree, NVQ Level 5)	21	8.4
Bachelor's Degree or equivalent (e.g., Graduate Certificate/Diploma, PGCE)	66	26.4
Master's Degree or equivalent (e.g., Postgraduate Certificate/Diploma)	42	16.8
Doctoral Degree	8	3.2
Other	23	9.2

Table 8

Employment Status

	n	%
Employed full time	70	28.0
Employed part time	36	14.4
Self-employed / freelance	38	15.2
On a government sponsored training scheme	1	0.4
Unemployed and seeking work	28	11.2
Retired	9	3.6
In further / higher education	64	25.6
Looking after home or family	6	2.4
On parental leave	1	0.4
Temporarily laid off	-	-
Permanently / long-term sick or disabled	29	11.6
Unable to work because of short-term illness or injury	9	3.6
Unable to work in country of residence	1	0.4
Other	22	8.8

Table 9

Income

	n	%
0 to £5,000 per year	58	23.2
£5,001 to £10,000 per year	51	20.4
£10,001 to £15,000 per year	41	16.4
£15,001 to £20,000 per year	15	6.0
£20,001 to £30,000 per year	26	10.4
£30,001 to £40,000 per year	13	5.2
£40,001 to £50,000 per year	6	2.4
£50,001 to £100,000 per year	7	2.8
£100,001 or more per year	1	.4
Prefer not to say	24	9.6
Other	8	3.2

Appendix B: Moderation Analysis

SPSS Output

This Appendix provides an example of the moderation analyses that were undertaken as part of this study. The example here highlights the interaction between discrimination and depression, with social support as a moderator. It is presented here as produced by SPSS.

Matrix

```
Run MATRIX procedure:

************** PROCESS Procedure for SPSS Release 2.15 *******************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 1
    Y = DDep
    X = Discmean
    M = MOSSTot

Statistical Controls:
CONTROL= ITmean   NEmean   Age      Qual     BodMatch TnUng    TnComp

Sample size
        250

**************************************************************************
Outcome: DDep

Model Summary
        R     R-sq      MSE        F      df1      df2        p
      .63      .40    92.82    22.70    10.00   239.00      .00

Model
             coeff       se        t        p     LLCI     ULCI
constant     14.70     6.31     2.33      .02     2.27    27.12
MOSSTot      -3.63      .76    -4.76      .00    -5.13    -2.13
Discmean      1.55     1.04     1.49      .14     -.50     3.61
int_1          .41      .69      .59      .56     -.96     1.77
ITmean         .36      .09     3.88      .00      .18      .54
NEmean        -.01      .15     -.08      .93     -.30      .28
Age           -.15      .05    -2.81      .01     -.26     -.05
Qual          -.42      .31    -1.35      .18    -1.04      .19
BodMatch      3.10     2.05     1.51      .13     -.94     7.15
TnUng          .64     1.73      .37      .71    -2.78     4.06
TnComp         .16     1.75      .09      .93    -3.28     3.61

Product terms key:

 int_1    Discmean    X     MOSSTot
```

```
R-square increase due to interaction(s):
       R2-chng        F      df1      df2        p
int_1      .00      .34     1.00   239.00      .56

*************************************************************************

Conditional effect of X on Y at values of the moderator(s):
  MOSSTot   Effect       se        t        p     LLCI     ULCI
    -1.03     1.14     1.21      .94      .35    -1.25     3.52
      .00     1.55     1.04     1.49      .14     -.50     3.61
     1.03     1.97     1.31     1.50      .13     -.62     4.56

Values for quantitative moderators are the mean and plus/minus one SD from
mean.
Values for dichotomous moderators are the two values of the moderator.

******************** JOHNSON-NEYMAN TECHNIQUE *************************

There are no statistical significance transition points within the observed
range of the moderator.

*************************************************************************

Data for visualizing conditional effect of X on Y
Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/Discmean MOSSTot DDep.
BEGIN DATA.

     -.75    -1.03    21.60
      .00    -1.03    22.46
      .75    -1.03    23.31
     -.75      .00    17.54
      .00      .00    18.71
      .75      .00    19.88
     -.75     1.03    13.48
      .00     1.03    14.96
      .75     1.03    16.45

END DATA.
GRAPH/SCATTERPLOT=Discmean WITH DDep BY MOSSTot.

* Estimates are based on setting covariates to their sample means.

******************* ANALYSIS NOTES AND WARNINGS ************************

Level of confidence for all confidence intervals in output:
    95.00

NOTE: The following variables were mean centered prior to analysis:
 Discmean MOSSTot

NOTE: All standard errors for continuous outcome models are based on the
HC3 estimator

------ END MATRIX -----
```

Appendix C: Contributor Guidelines – Journal of Homosexuality

Manuscript Submission. Address manuscripts to the Editor: Dr. John P. Elia, jpelia@sfsu.edu

Prospective authors are to send the following items as e-mail attachments: (1) a cover letter indicating that the manuscript is not under consideration for publication elsewhere; (2) a blinded (i.e., with no references or indications as to the author's name) electronic copy of the manuscript; (3) an unblinded copy (complete with author's name, academic degree, professional affiliation, contact information, and any desired acknowledgment of research support or other credit) of the manuscript; and (4) a free-standing abstract of no more than 150 words excluding the title of the manuscript, which is to appear at the top of the page, and 5-7 key words. Also, manuscripts are to be submitted in English using Microsoft Word (in 12-point font, *Times New Roman*, double-spaced (with headers bearing the title or partial title of the manuscript), paginated, and with one-inch margins (top/bottom, left/right)). Manuscripts must not exceed 6,000 words (inclusive of references) –approximately 25 pages - unless an exception is made by the editor. Authors are to follow the publication guidelines of the *Publication Manual of the American Psychological Association,* 6th edition (2009). Authors are responsible for obtaining permission to reproduce copyrighted material from other sources and are required to sign an agreement for the transfer of copyright to the publisher. As an author, you are required to secure permission if you want to reproduce any figure, table, or extract from the text of another source. This applies to direct reproduction as well as "derivative reproduction" (where you have created a new figure or table which derives substantially from a copyrighted source.) All accepted manuscripts, artwork, and photographs become the property of the publisher.

References. References, citations, and general style of manuscripts should be prepared in accordance with the APA Publication Manual, 6th ed. (2010). Cite in the text by author and date (Lee, 2009) and include an alphabetical list at the end of the article. *Examples:*

Journal: Boehmer, U., & Case, P. (2006). Sexual minority women's interactions with breast cancer providers. *Women & Health, 44*(2), 41–58.

Book: Kinsey, A. C., Pomeroy, W. B., Martin, C. E., & Gebhard, P. H. (1953). *Sexual behavior in the human female.* Philadelphia, PA: W. B. Saunders Company.

Contribution to a Book : Kimmel, M. S. (1994). Masculinity as homophobia: Fear, shame, and silence in the construction of gender identity. In H. Brod & M. Kaufman (Eds.), *Theorizing masculinities* (pp. 119–141). Thousand Oaks, CA: Sage.

Illustrations. Illustrations submitted (line drawings, halftones, photos, photomicrographs, etc.) should be clean originals or digital files. Digital files are recommended for highest quality reproduction and should follow these guidelines:

- 300 dpi or higher
- Sized to fit on journal page
- EPS, TIFF, or PSD format only
- Submitted as separate files, not embedded in text files

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Tables and Figures. Tables and figures (illustrations) should not be embedded in the text, but should be included as separate sheets or files. A short descriptive title should appear above each table with a clear legend and any footnotes suitably identified below. All units must be included. Figures should be completely labeled, taking into account necessary size reduction. Captions should be typed, double-spaced, on a separate sheet.

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Critical Appraisal:

Challenges of the Research Process

Word count: 4000

Jay McNeil

Trainee Clinical Psychologist

Doctorate in Clinical Psychology

Division of Health Research

Lancaster University

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LA1 4YT

Critical Appraisal

In this critical appraisal I will begin by describing my position as a researcher, before summarising my findings, and then discussing some generic and trans-specific limitations with research which have impacted on these papers. Following this I will describe some specific strengths, and make recommendations. This appraisal is focussed on work around people who are trans or have a trans history. I will therefore omit the 'trans' prefix from trans women, trans men and trans people as it is not necessary. It will be included where comparisons are made with cis people.

Reflexivity

I have tried to be impartial during this research process, however even in the context of empirical research I believe data are interpreted through an individual lens. Thus a consideration of my position is imperative. As a trans person who has an active political background, I have approached this from a non-pathologising perspective on gender. I disagree with the concept of clinic-based diagnostic services, and this may have affected my interpretation of other papers. However having worked in the community for almost a decade, I also recognise that these structures are seen as positive for some, and are our currently accepted way of enabling access to interventions for those who need to make physical changes. I also have no personal experience of going through clinics and have worked in a gender clinic. I have attempted to draw on these various experiences to ensure an open mind. As someone with a rooting in the trans-community first and foremost however, I may have been sensitive to some of the nuances within the papers in a way that others might not have been, which may have influenced my reading and representation of these papers. I would encourage others to also engage with the research and various ethical and political arguments centring around trans healthcare, to form their own opinions in these important

debates. I also believe that having lived experience as a member of the group which I am researching, and having significant experience of working with a range of trans colleagues in the past, I am able to bring a perspective which would otherwise be lacking, and which is a strength in this process.

Summary of Thesis Findings

This thesis explored trans-minority mental health. It consisted of two papers. The first, a systematic literature review, explored factors related to suicidal ideation and attempts. This demonstrated that, in terms of demographic and mental health factors, participants differed a little from the wider population. Importantly, suicidal ideation and attempts had complex and contradictory relationships with characteristics such as age, ethnicity and gender. The MSH provided a useful framework for considering the impact of additional experiences relating to belonging to an oppressed minority group, and their interplay with more general stressors. Negative experiences were related to suicidal ideation and attempts; were implicated in the relationships between trans-specific factors (such as being seen as a trans person) and these suicide-related outcomes; and affected participants' lives at multiple levels. Having a community and different types of social support appeared protective. Ultimately the complexity and interrelationships between factors affecting suicidal ideation and attempts needs clarification, suggesting an important area for further research. Finally in relation to the MSH, there is a need to explore the impact and role of proximal stressors further (Testa, Habarth, Peta, Balsam & Bockting, 2015). While the MSH did not provide a complete model for thinking about suicide in these populations, it offered an explanation and structure for understanding the impact of additional minority-specific stressors on well-being.

The second paper was an empirical study which aimed to test the impact of discrimination, internalised transphobia, and negative expectations of future treatment on

depression, anxiety and stress. Furthermore, the paper aimed to explore whether any relationships could be moderated by functional social support (Sherbourne & Stewart, 1991). Participants evidenced substantially higher levels of poor mental health outcomes than the general population. These were related to the MSH stressors investigated, which accounted for substantial proportions of the variance in outcomes even when other variables were controlled for. Functional social support did not moderate these relationships, suggesting that whilst support can be protective, this is likely to relate to forms of social support linked with shared minority experience and group identity (such as from community groups, or a cohesive family structure where the individual feels that they belong irrespective of identity). Functional support may still be a predictor and this warrants further exploration, in addition to investigating the degree to which proximal stressors mediate the impact of distal stressors. Similar to the literature review, this study highlighted the different levels at which oppression and negative experiences may impact upon participants' well-being, suggesting multiple opportunities for intervention to improve mental health outcomes.

General Limitations

This thesis has been subject to a number of limitations, many of which were addressed in the discussion sections of the relevant papers. Some additional limitations relating to the thesis process will be briefly considered here, however the remainder of this appraisal will focus on the theme of the conceptualisation of trans people. This has been prevalent across both papers, impacting upon the conclusions which could be drawn. It reflects the different ways in which people are viewed by researchers, clinicians and community members and the epistemological positions underpinning these, and the ways in which these views are enacted socially and through academic research.

CRITICAL APPRAISAL

A specific sampling concern was one of community fatigue (e.g., Clark, 2008). When I sent out the calls for participants I had not realised there were multiple other online research surveys being conducted with these populations, some of which also related to mental health. I was informed by one group that local community members were 'fed up' with surveys, impacting upon their willingness to take part. This is an important issue, and strategies such as TransNet, a US based research consortia with federal funding, currently exploring a cohesive research agenda (see http://360.bio/grants/88888916667/transnet-developing-research-agenda-transgender-health/), could easily be applied in the UK. Having an over-view of research gaps and needs, a co-ordinating body to promote this could potentially avoid some of these fatigue issues and similar concurrent studies.

In relation to the MSH, this study only explored a limited number of the variables included in that model. This was primarily due to the measures available, however with a broader remit and sufficient time I could potentially have validated other measures in this context or perhaps devised some. In future it may be more helpful to investigate the model as a whole to fully understand the interactions among its component parts, perhaps using more sophisticated statistical analyses such as structural equation modelling.

Finally, it is important to consider the ethics of this form of research. Asking a group of people who experience generally poor mental wellbeing to discuss their mental health, may have potentially negative effects upon them. I attempted to protect participant wellbeing by, for example, having research materials reviewed by a representative trans organisation to ensure they were sensitively and appropriately worded. I aimed to be as transparent within them as possible, to ensure that participants would have enough information to make an informed decision as to whether or not to take part. During the Trans Mental Health Study in 2012, we asked in-depth questions about participant's past suicide attempts. A small number of people disclosed that they were actively planning to take their lives in coming weeks. I

strongly reflected on this experience as I was unable to identify them to offer support because the survey was anonymous. While anonymity is important within a small and marginalised population, this protection also means that highlighted issues may remain unresolved. I offered my contact details and details of support organisations for those who felt that taking part had raised difficulties. However that relies on someone who may be distressed taking the initiative to make contact. This ethical dilemma was not fully resolved in this thesis. Lakeman and FitzGerald (2009), in their consideration of the ethics of suicide research highlighted steps that could be taken to ensure ethical rigour. Although this research is not as sensitive, due to the potential for participant distress in considering their difficult experiences, following suggestions such as these (e.g., providing full information) may be a way to minimize any potential impact.

Trans-Research Issues

A number of important issues stood out which impacted on this thesis, specifically relating to research focussing on these populations.

The primary concern related to the way people were conceptualised by researchers, and how this resulted in them being categorised. Within this three key issues emerged; exploring those papers which were part of the literature review highlights these clearly. The first issue concerned who were included as participants. In some studies, participants were defined as those who had received a clinical diagnosis of gender identity disorder, or gender dysphoria, in relation to diagnostic categories (e.g., Heylens et al., 2014), representing a medical model, pathological view of identities. This was often indicative of a binary approach to gender, as in these papers, participants tended to be categorised as men or women. Some non-medical studies largely relied on binary conceptualisations of gender too, referring to identifying, in some way, as *opposite* to the gender assigned at birth (e.g.,

Goldblum et al., 2012). Maguen and Shipherd (2010), recorded participant's gender on a Likert scale with male at one end and female at the other. Although this allows for a little more flexibility in identity, it still relies on a binary understanding, and also on a view of male and female as being opposite ends of a single spectrum. This is unhelpful for people with non-binary identities, who may inhabit or poly- or non- gender identities, or have a fluid self-perception that may change. In other papers, participants self-defined, selecting more than two binary options (e.g., Bauer, Scheim, Pyne, Travers & Hammond, 2015). One paper conflated gender and sexuality, saying that participants self-identified as gay, lesbian, bisexual and/or transgender (House, van Horn, Coppeans & Stepleman, 2011). In some instances papers were unclear how their participants had been defined (e.g., Meier, Fitzgerald, Pardo & Babcock, 2011). This made it difficult to know how comparable the findings of different papers were; where their participants were all referred to as trans people, but with potential for this to mean many different types of people and identities.

The second issue herein refers to how participants were segregated and compared. Where studies originated in gender clinics, they tended to separate participants into men and women. Given that their inclusion mainly relied on some form of psychiatric diagnosis, it is not clear whether this separation is based on their actual identities, or on assumptions made based on their assigned sex. This also occurred in other papers where the categories participants were placed in may have been unrelated to the definitions they might have chosen themselves. Primarily, they were often allocated into categories based on whether they were assigned male or female at birth, and whether they were also trans in some way. Thus those assigned female at birth were labelled as men, and those assigned male at birth were labelled as women (e.g., Maguen & Shipherd, 2012, although they also included bigender and cross-dresser groups in their analysis). Similarly, Nuttbrock et al. (2010) reported studying women, however their definition included people who were assigned male

at birth, but who did not see themselves as entirely male all the time. Simply because someone is not categorising themselves as male is not cause to group them as female, as they may inhabit any number of identities. Thus it is not possible to conclude that the findings relate to women alone, as such a sample could include people who have a range of different identities. Categorising people in any way that relates to the sex they were assigned at birth, which for many is a significant source of distress, seems entirely disrespectful; but more than this, it involves grouping people in ways that may potentially have no relevance to their identities and lives. This calls in to question the validity of these groupings, and whether they are meaningful ways of categorising people in relation to the outcomes studied. It also raises ethical issues about how participants' data are used. In my experience of working in community groups for almost a decade, many participants would likely have not participated had they known that they were going to be categorised in ways that may not have represented them, especially in ways where they would be categorised by the often unwanted sex assigned at birth.

The third and final issue relating to the categorisation of participants was how they were then compared, and to whom. As established above the ethics and validity of grouping participants into men and women where this has not been self-defined is suspect, thus comparing these two groups may be meaningless. Furthermore, viewing participants as having a separate or 'third' gender identity, other than male or female, is also flawed. Although there are some people for whom 'trans' is their gender identity, there are also many others for whom it is not. Some of those people also do hold a binary gender identity of male or female. When studies group participants as 'male, female and/or transgender', they are assuming that those who are trans or have a trans history will identify as such. For example, Effrig, Bieschke and Locke (2011) compared 'men',' women' and trans people. Some trans people with a binary identity would have elected to tick 'male' or 'female' as that would

represent their gender. In this instance they would then have been aggregated with cis men and cis women. As a result it is not possible to say that conclusions from this sample about the differences between trans and the assumedly cis groups are valid, as there may have been trans people in all three. Categorising 'men' and 'women' in any study relating to trans people without the prefix of cis, where that is clearly the authors' intent, is also demeaning to trans people by identifying them as 'other' to 'real' men and women (see Ansara & Hegarty, 2014, for a further discussion of these issues of cisgenderism).

Some of these issues relate to misunderstandings, differences of opinion or different conceptualisations of people's identities. Some also relate to the limitations of language. For example, whilst referring to trans people here, I am aware that some of the people who may be seen as trans, or who I may consider trans, will not hold that identity themselves and may simply see themselves as men or women without the trans prefix. In a more subtle way, I am making a similar error to those made in some of these studies. I feel that there is a tension here in being respectful of people and their identities, and in having the language to express differences in experiences and identities in ways that are relevant to the individuals concerned. Similarly, in researching these communities, it is unclear whether aggregating people who may hold vastly different experiences is more or less useful than separating them into groups. The literature review did highlight complex interactions between some experiences and gender identity, but these require a great deal of further exploration. In essence, as a researcher I am aware that I will invariably get this wrong for some people some of the time. However it is also important that I should continue to strive to minimise what are essentially microaggressions in research (Nadal, 2013). The first step in this, I feel, is recognition of my assumptions and biases, a robust questioning of the language that I use, and a determination to continue learning and changing until I have done better. But these issues do need addressing, as the concerns surrounding validity and ethics which are raised

here, have limited both the literature review in relation to its conclusions, and the empirical paper in terms of the data underlying the theories and in my ability to address these. This is a significant limitation of the available data and of my papers.

A second, and related concern within the empirical studies available, referred to the language that was used to describe the participants. In some instances this was language that would be considered widely acceptable by the majority of Western communities (e.g., trans people, transgender persons). However women were frequently referred to as MTF or male-to-female, and men as FTMs or female-to-male (e.g., Grossman & D'Augelli, 2007; Heylens et al, 2014). Defining people in this way continues to value their identities only in relation to what they have been assigned, rather than simply who they are, as men, women, trans men or women, or other gender and non-gender identities. Whilst these terms are still used among some, this is reducing. More pathologising were the psychiatric terms which many actively reject as representing an outdated and offensive way of viewing their identities as a malady. These included referring to participants in various ways such as male-to-female transsexuals and patients (Heylens et al, 2014), and female-to-male type and male-to-female type transsexuals (Hoshiai et al, 2010). Although highly offensive to most people, some studies ignored their identities entirely and referred to them solely in relation to the sex they were assigned at birth, for example discussing women as 'males' (Lobato et al., 2007), or referring to 'natal males' and 'natal females' (Skagerberg, Parkinson & Carmichael 2013). These more pathological and disrespectful references to participants were primarily, although not exclusively, within papers which originated in gender clinics.

As highlighted in the review, there are differences between the data relating to mental health which originate in clinics, and those which originate in community-based studies, and it may be that approaching people from a pathologising perspective further adds to this separation between the two. This generally reflects the different ways in which these

identities are viewed; where for some they are a diagnosis to be established, intervened with, and corrected, and for others they simply represent lived experience. Whilst the language used in some of the papers here has moved in to the realms of being offensive, it also has more subtle effects. Viewing people as 'patients' within a psychopathological model, and failing to respect and value their individual identities, may also lead to a lack of care or concern for those people. Nowhere was this highlighted more succinctly than in the difference between two of the papers in the literature review. Bauer et al (2015) conducted a study of intervenable factors associated with suicide risk. This paper was part of the larger PULSE project, which involved a number of cis and trans people as authors and researchers; one of whom, Kyle Scanlon, was tragically lost to suicide three years previously. The authors dedicated this paper to their colleague's memory. A second paper which was reviewed here was published by Heylens et al. (2014). They explored the impact of different stages of physical gender-related interventions within a gender clinic, to establish whether 'psychopathology' reduced with interventions. Of 58 participants, one sadly was lost to suicide. This represents just under 2% of their sample, and given that the study concerned mental wellbeing, I would have expected and valued some acknowledgement or discussion around this event. In reality, the only reference that was made was "One patient committed suicide during follow-up" (p. 121), before stating that only 57 participants were therefore included in the study. Whilst suicide was not the main focus of the paper, this is a significant event and to only reference this person's death in relation to a reduction in sample size, seems inhumane. In addition to the ways in which people are discussed and labelled within that study, my most sympathetic reading is that this appears to be a loss of compassion for the clients which the clinic is supposed to serve.

As a final consideration, it is also important to understand who determines and who has access to the evidence-base available. Research that is funded tends to be that which

occurs in large institutions, such as health services or universities, and gender clinics. Thus 'expert' professionals have autonomy over what research is important, and how this is conducted. As highlighted in the literature review, community-based studies may yield somewhat different findings to other studies, but in practice they may not be funded because of a lack of connection to such institutions, or in some cases, because of prejudice. For example, a research team of which I was a member was rejected from a funding bid, due to a reviewer's concern that trans researchers would not be objective in researching trans issues. Where research agendas are not led by the communities but by others, especially by those who hold power over such groups, this agenda may not serve these communities. Furthermore, in publishing research, researchers, myself included, often publish in peer-reviewed academic journals. This separates knowledge from lay people, so research affecting a community may be inaccessible to its members. To address this I have previously also published in grey literature, and disseminated research findings to the groups it concerns. This has formed part of my dissemination plan here, which is a strength of this research. Finally, once research is accessed, further issues may arise. As a trans person, writing these papers was incredibly difficult at times. Not only did I have to negotiate the stresses of writing a thesis, but before I could interpret, analyse or consider many of the papers, I had to address the impact which reading some of the horrifying and offensive ways in which my communities were spoken about had on me as an individual. This is a significant barrier to access to evidence, and it is one which could easily be changed.

Strengths

Although there are limitations within these papers, this thesis does still make a substantial contribution to the field of trans mental health. It provides a comprehensive overview of the current research, especially in relation to suicide, and highlights areas where the evidence-base needs to be developed. The empirical paper firmly suggests areas for

further research, while highlighting various potential avenues for intervening both clinically and systemically to enhance trans people's mental health and well-being. Finally, the paper contributes to the MSH through suggesting the need for refinement and specificity within the model, which will enhance its utility both as a theoretical framework and as a practical tool for intervention.

Recommendations

Having reviewed multiple papers during the course of the thesis process, I believe that those studies involving community members throughout their process (for example as researchers, or through advisory support) are the most robust and relevant to a wider range of people. Excluding groups which research concerns from actively guiding and conducting it would seem to be an enactment of privilege. Ensuring adequate representation in research supports a more community-centred research agenda, and the production of research which is responsive to changes in trans-culture.

In relation to language and how participants were conceptualised and categorised, robust guidelines, developed with relevant communities and organisations would be helpful. This should include guidance addressing issues such as how statistically it makes sense to organise a sample in relation to gender, and how questions around gender identity might be asked.

Finally, in relation to the findings of the two papers here, it is clear that ultimately people's mental health is the product and responsibility of society, our institutions and social structures and us all as individuals (trans or cis). Solutions which focus on working solely with individuals to enable them to tolerate these multiple sources of stress and oppression is simply being complicit within them. As clinicians our responsibility in formulating distress is to ensure that it is holistic, and that our interventions are informed by these many different

opportunities for change. To ignore these and focus in isolation on the one part of this system with the least power would be unethical. We therefore have a responsibility to work to effect change in many different ways, if we are truly to halt these unjust and entirely preventable outcomes.

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Ethics Application and

Project Protocol

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Faculty of Health and Medicine Research Ethics Committee (FHMREC) Lancaster University

Application for Ethical Approval for Research involving direct contact with human participants

Instructions ***[for additional advice on completing this form, hover PC mouse over ' guidance']***

1. Apply to the committee by submitting:
   a. The University's **Stage 1 Self Assessment (part A only)** and the **Project Questionnaire**. These are available on the Research Support Office website: LU Ethics
   b. The completed application **FHMREC form**
   c. Your full research proposal (background, literature review, methodology/methods, ethical considerations)
   d. All accompanying research materials such as, but not limited to,
      1) Advertising materials (posters, e-mails)
      2) Letters/emails of invitation to participate
      3) Participant information sheets
      4) Consent forms
      5) Questionnaires, surveys, demographic sheets
      6) Interview schedules, interview question guides, focus group scripts
      7) Debriefing sheets, resource lists

Please note that you DO NOT need to submit pre-existing handbooks or measures, which support your work, but which cannot be amended following ethical review. These should simply be referred to in your application form.

2. Submit all the materials electronically as a **SINGLE email attachment in PDF format** by the deadline date. **Before converting to PDF ensure all comments are hidden by going into 'Review' in the menu above then choosing *show markup>balloons>show all revisions in line.***
3. Submit one collated and signed paper copy of the full application materials in time for the FHMREC meeting. If the applicant is a student, the paper copy of the application form must be signed by the Academic Supervisor.
4. Committee meeting dates and application submission dates are listed on the FHMREC website. Applications must be submitted by the deadline date, to: Dr Diane Hopkins d.hopkins@lancaster.ac.uk
5. Prior to the FHMREC meeting you may be contacted by the lead reviewer for further clarification of your application.
6. Attend the committee meeting on the day that the application is considered, if required to do so.

1. **Title of project**	Transgender Mental Health: Testing the Minority Stress Model
2. **Name of applicant/researcher**: Jay McNeil	

ETHICS

3. **Type of study**

x Includes *direct* involvement by human subjects.

☐ Involves existing documents/data only, or the evaluation of an existing project with no direct contact with human participants. Please complete the University Stage 1 Self Assessment part B. This is available on the Research Support Office website: LU Ethics. Submit this, along with all project documentation, to Diane Hopkins.

4. If this is a student project, please indicate what type of project by marking the relevant box: (please note that UG and taught PG projects should complete **FHMREC form UG-tPG**, following the procedures set out on the FHMREC website

PG Diploma Masters dissertation DClinPsy SRP PhD Thesis PhD Pall. Care

PhD Pub. Health PhD Org. Health & Well Being PhD Mental

Health MD DClinPsy Thesis x

Applicant Information

5**. Appointment/position held by applicant and Division within FHM** Trainee Clinical Psychologist

6**. Contact information for applicant**:
E-mail: j.mcneil@lancaster.ac.uk **Telephone**: XXXXXXXXXXX (please give a number on which you can be contacted at short notice)

Address: Doctorate in Clinical Psychology, Furness Building, Lancaster University, Bailrigg, Lancaster, LA1 4YG, UK

7. **Project supervisor(s), if different from applicant**: Dr Fiona Eccles & Dr Sonja Ellis

8. **Appointment held by supervisor(s) and institution(s) where based (if applicable)**: Dr Fiona Eccles – Lecturer (Health Research, University of Lancaster). Dr Sonja Ellis – Lecturer (Sheffield Hallam University)

9. **Names and appointments of all members of the research team (including degree where applicable)**

As above.

The Project
NOTE: In addition to completing this form you must submit a detailed research protocol and all supporting materials.

10. **Summary of research protocol in lay terms (indicative maximum length 150 words):**

Transgender people experience very poor mental health because of the stresses associated with being treated as different in society. This study aims to explore what factors could protect transgender people from the harmful effects of belonging to a minority group, which could help in designing interventions to support them. Around 350 participants will be recruited online and through support groups, and will be invited to take part in an online survey. To take part, they will need to self-identify as trans, be 18 years old or over, and be able to read and write English. Participants will be asked to complete a number of questionnaires for about half an hour. These will cover things like their experiences of being in a minority group (such as discrimination), feelings and beliefs about being trans, common mental health issues and social support. Their answers will be anonymous. They will be given information about how to contact the researcher if they have any questions before or afterwards, and will be given details of where they can get support if they are upset by taking part. It isn't expected that they will experience any harm from taking part. The results will be written up and shared widely, especially with transgender people.

11. **Anticipated project dates (month and year only)**

Start date: August 2015 End date: May 2016

12. **Please describe the sample of participants to be studied (including maximum & minimum number, age, gender**):

The sample will consist of people who self-identify as transgender. This will include people who inhabit a binary gender identity and those who do not, people whose gender identity is fixed and those whose identity is fluid. Those under the age of 18 will be excluded. Due to financial and methodological limitations, those who do not read and write English well enough to complete the questionnaires are excluded, as are those with physical or intellectual needs which mean they may be unable to utilise a computer.

Preliminary estimates based on the information given by Kenny (2015)* indicate that between 300-350 participants will be necessary to detect a large effect size with 80% power. A minimum number of 100 will be required to conduct correlational analyses, and a maximum required number would be 350, however greater numbers would not jeopardise the integrity of the analysis.

Participants may (depending on numbers) be grouped according to whether they have a binary or non-binary identity, whether they are transmasculine or transfeminine, and whether they have undergone a process of transition if they have wanted to do so, or not.

*Kenny, D. A. (2015). Moderation Variables. Retrieved from http://davidakenny.net/cm/moderation.htm

13. **How will participants be recruited and from where? Be as specific as possible**.

Participants will be recruited via national and regional trans organisations and groups from throughout the UK and Europe. European recruitment will be via XXXX, a member organisation who the researcher has had involvement with in the past, and which represents XXXXX. UK organisations will be contacted by email and/or phone by the researcher, and in some cases visited in person to explain the research in detail. Recruitment will also involve contacting online groups to further disseminate the research request. Information concerning the research will be given to these contacts to disseminate outward to their contacts (see the Invitation Email and Participant Information in Appendix One[1] - this is a truncated Participant Information Sheet, the complete version of which can be found in Appendix Four) and as such participants will self-select through a

snowballing process. The information provided will contain a link to the online survey, which people wishing to participate may follow to take part, and where they will also find information about organisations to contact should they require support (Welcome Page and Participant Information Sheet: Appendix Four). It will also contain contact information for the researcher should potential participants have any questions.

Previous research with trans people undertaken by the author suggests that these methods are effective in reaching large numbers of participants due to having positive links within the communities. It is important to note that visiting some groups in person is an important part of the recruitment process as many trans people are concerned with how they may be represented, even where they are aware of a researcher's background. This is important to allay any concerns. Key groups which it would be useful to visit include the XXXXX, and groups in XXXXX, such as XXXXX. Travel to visit groups will be subject to suitable funds being available, and approval from the Research Director. Where organisations request a visit which cannot be undertaken (due to financial, time or risk issues) a meeting by skype will be offered, or an online Q&A session. Participants in online discussions will be informed that skype is not secure, and reminded of this at the start of any skype interaction.

14. **What procedure is proposed for obtaining consent**?

Information detailing the purpose of the study will be provided to potential participants in the information disseminated to groups, which also contains a link to the online survey should they wish to take part (see Invitation Email with truncated participant information; Appendix One). When participants follow the link to the survey, they will be presented with information about the study (Appendix Four). They will then be asked whether they understand how the data will be used, and if they consent to taking part (see consent form in Appendix Four). If they select no, they will be unable to complete the survey and they will be directed to a page thanking them for their time (Appendix Five). Participants will be provided with contact details for the researcher so that they may ask any questions they wish in order to secure informed consent. These contact details will be available in the initial email, and on the front and back page of the online survey (Appendix Six).

15. **What discomfort (including psychological eg distressing or sensitive topics), inconvenience or danger could be caused by participation in the project? Please indicate plans to address these potential risks.**
State the timescales within which participants may withdraw from the study, noting your reasons.

Previous mental health research with trans people undertaken by the author has demonstrated that although answering mental health questions can be difficult, having the opportunity to do so and to have their voices heard makes taking part a broadly meaningful and positive experience for most participants. It is not anticipated that any physical or psychological harm will come to participants; however every step will be taken to avoid any unexpected harm. The study involves completion of an online questionnaire which can be completed where ever the participants feel most comfortable and in the time frame they choose. In the participant information at the start of the survey participants will be given contact details for organisations should they become distressed whilst taking part. These details will then be given again at the end of the survey. Participants will be fully informed of their rights (i.e. that they will be able to withdraw up to the point they input data in to the survey), and of how their data will be anonymised. Participants in other European countries will be provided with the website URL for XXXXX where a list of member organisations can be found, whom they can make contact with for information or support.

16. **What potential risks may exist for the researcher(s)? Please indicate plans to address such risks (for example, noting the support available to you; counselling considerations arising from the sensitive or distressing nature of the research/topic; details of the lone worker plan you will follow, and the steps you will take**).

There are no identified risks for the researchers as the data will be collected and analysed electronically.

17. **Whilst we do not generally expect direct benefits to participants as a result of this research, please state here any that result from completion of the study**.

It is not anticipated that there will be direct benefits to those who take part in this study, however participants in previous research have found it to be a positive and meaningful experience.

18. **Details of any incentives/payments (including out-of-pocket expenses) made to participants**:

No incentives will be offered to participants, who are not expected to incur any related expenses from taking part.

19. **Briefly describe your data collection and analysis methods, and the rationale for their use. Please include details of how the confidentiality and anonymity of participants will be ensured, and the limits to confidentiality**.

This is a quantitative study, although some qualitative comments boxes will be available to participants who wish to add information to the quantitative details provided. Data collection will be via Qualtrics online survey software.
Participants will complete a number of measures of mental health, minority stress, and potential moderators (see protocol for information), and demographic information. Data will be analysed using moderation analysis to establish whether moderators affect the predicted relationship between minority stress and mental health. This may then inform areas for intervention in this relationship. Data collected will be anonymous (i.e. names will not be collected) and will be aggregated for analysis. If any quotes are used from descriptive questions in publications, presentations or teaching, these will not be attributed to any one participant (participant numbers will be allocated instead), and will be screened to ensure that they will not identify any person. Participants will be informed that if they provide written information it may be used in this way.

20. **If relevant, describe the involvement of your target participant group in the *design and conduct* of your research**.

National transgender groups have been involved in identifying this as an important and relevant field of enquiry for Clinical Psychology. Work with the transgender communities has informed this study and its areas of focus. Transgender groups will be involved in the dissemination of the research invitation. A trans-led organisation has provided comments on a draft protocol, participant information and survey, which has been used to ensure that the materials are acceptable to trans communities.

21. **What plan is in place for the storage of data (electronic, digital, paper, etc.)? Please ensure that your plans comply with the Data Protection Act 1998**.

ETHICS

Only fully anonymous data will be downloaded from the survey site, and this will be stored in line with University data storage policies. Data downloaded will only be downloaded and stored in the researcher's personal file space on the University Server. It will not be stored on any other device. After the study has completed any anonymised data will be encrypted and transferred to the DClinPsy admin team. The data custodian during this period will be the programme Research Director, XXXXX, who will store the data in a password-protected file space on the university server. The data will be destroyed by the Research Coordinator after a period of 10 years has passed.

22. **Will audio or video recording take place?** x no audio video
If yes, what arrangements have been made for audio/video data storage? At what point in the research will tapes/digital recordings/files be destroyed?

n/a

23. **What are the plans for dissemination of findings from the research? If you are a student, include here your thesis.**

The findings will be submitted for publication in a peer reviewed journal (i.e. Journal of Homosexuality), and may also be presented at relevant conferences (such as the LGBT Health Summit, or Trans Health Matters). In addition, the study will be written up as a DClinPsy thesis and held at the University, and presented to students and lecturers. Finally, an executive summary will be produced and disseminated among trans organisations and online.

24. **What particular ethical considerations, not previously noted on this application, do you think there are in the proposed study? Are there any matters about which you wish to seek guidance from the FHMREC**?

There are no significant ethical issues with this study. Informed consent will be sought and participants will be given the opportunity to ask questions concerning the research. They will also be informed that once they have completed the survey it will not be possible to withdraw from the study as their data will be anonymous and thus it will not be possible to locate it in the data set. As with any research where participants are asked about potentially distressing events, they may feel a range of emotions in taking part. They will be advised that this may occur and will be offered details of support before and after the survey.

Signatures: Applicant: Jay McNeil

Date: 22.06.15

*Project Supervisor (if applicable):

…….. Date:

……

*I have reviewed this application, and discussed it with the applicant. I confirm that the project methodology is appropriate. I am happy for this application to proceed to ethical review.

Stage 1 Self-Assessment Form (Part A) - for Research Students

(To be completed by the student together with the supervisor in all cases; send signed original to Research Support)

Student name Jay McNeil

Supervisor XXXXX Department: FHM

Title of project: Transgender Mental Health: Testing the Minority Stress Model

Proposed funding source (if N/A) N/A

1. Please confirm that you have read the code of practice, 'Research Ethics at Lancaster: a code of practice' and are willing to abide by it in relation to the current proposal? **Yes**

   If no, please provide explanation on separate page

2. Does your research project involve non-human vertebrates, cephalopods or decapod crustaceans? **No**

   If yes, have you contacted the Ethical Review Process Committee (ERP) via the University Secretary (Fiona Aiken)?

3a. Does your research project involve human participants i.e. including all types of interviews, questionnaires, focus groups, records relating to humans etc? **Yes**

   If yes, you must complete Part B unless your project is being reviewed by an ethics committee

3b. If the research involves human participants please confirm that portable devices (laptop, USB drive etc) will be encrypted where they are used for identifiable data **Yes**

3c. If the research involves human participants, are any of the following relevant:

No The involvement of vulnerable participants or groups, such as children, people with a learning disability or cognitive impairment, or persons in a dependent relationship

Yes The sensitivity of the research topic e.g. the participants' sexual, political or legal behaviour, or their experience of violence, abuse or exploitation

Yes The gender, ethnicity, language or cultural status of the participants

No Deception, trickery or other procedures that may contravene participants' full and informed consent, without timely and appropriate debriefing, or activities that cause stress, humiliation, anxiety or the infliction of more than minimal pain

No Access to records of personal or other confidential information, including genetic or other biological information, concerning identifiable individuals, without their knowledge or consent

No The use of intrusive interventions, including the administration of drugs, or other treatments, excessive physical exertion, or techniques such as hypnotherapy, without the participants' knowledge or consent

No Any other potential areas of ethical concern? (Please give brief description)

ETHICS

4. Are any of the following potential areas of ethical concern relevant to your research?

No Could the funding source be considered controversial?

No Does the research involve lone working or travel to areas where researchers may be at risk (eg countries that the FCO advises against travelling to)? If yes give details.

No Does the research involve the use of human cells or tissues other than those established in laboratory cultures?

No Does the research involve non-human vertebrates?

If yes, has the University Secretary signified her approval?

No Any other potential areas of ethical concern? (Please give brief description)

5. Please select **ONE** appropriate option for this project, take any action indicated below and in all cases **submit the fully signed original self-assessment to RSO**.

☐ **(a) Low risk, no potential concerns identified**
The research does **NOT** involve human participants, response to all parts of Q.4 is 'NO'. No further action required once this signed form has been submitted to RSO

☐ **(b) Project will be reviewed by NHS ethics committee**
Part B/Stage 2 not usually required, liaise with RSO for further information. If Lancaster will be named as sponsor, contact RSO for details of the procedure

☐ **(c) Project will be reviewed by other external ethics committee**
Please contact RSO for details of the information to submit with this form

☒ **(d) Project routed to UREC via internal ethics committee**
SHM and Psychology only. Please follow specific guidance for your School or Department and submit this signed original self-assessment to RSO

☐ **(e) Potential ethical concerns, review by UREC required**
Potential ethical concerns requiring review by UREC, please contact RSO to register your intention to submit a Stage 2 form and to discuss timescales

☐ **(f) Potential ethical concerns but considered low risk, (a)-(e) above not ticked**
Research involves human participants and/or response to one or more parts of Q.4 is 'YES' but ethical risk is considered low. Provide further information by completing PART B and submitting with this signed original PART A to RSO

Student signature: Jay McNeil Date: 22.06.2015

Supervisor Date:

Signature: _____

THE UNIVERSITY OF LANCASTER

PFACT project information and ethics questionnaire

(*To be completed by the student together with their*

supervisor in all cases) Name of student: Jay McNeil

Name of supervisor: Dr Fiona Eccles & Dr Sonja Ellis

Project Title: Transgender Mental Health: Testing the Minority Stress Model

1. *General information*

1.1 Have you, if relevant, discussed the project with

☐ the Data Protection Officer?

☐ the Freedom of Information Officer?

X N/A

(Please tick as appropriate.)

1.1 Does any of the intellectual property to be used in the research belong to a third party?

N

1.2 Are you involved in any other activities that may result in a conflict of interest with this research?

N

1.3 Will you be working with an NHS Trust?

N

1.4 If yes to 1.3, what steps are you taking to obtain NHS approval?

_____

_____

1.5 If yes to 1.3, who will be named as sponsor of the project?

_____

1.6 What consideration has been given to the health and safety requirements of the research?

It is not expected that any significant risks will be incurred by the researcher or participants in the course of this study. It is an online survey which participants will be able to complete in a place and at a time of their choosing.

2. *Information for insurance or commercial purposes*

(*Please put N/A where relevant, and provide details where the answer is yes.*)

2.1 Will the research involve making a prototype? N/A

2.2 Will the research involve an aircraft or the aircraft industry? N/A

2.3 Will the research involve the nuclear industry? N/A

2.4 Will the research involve the specialist disposal of waste material? N/A

2.5 Do you intend to file a patent application on an invention that may relate in some way to the area of research in this proposal? If YES, contact XXXXX)

N/A

3. <u>*Ethical information*</u>

(*Please confirm this research grant will be managed by you, the student and supervisor, in an ethically appropriate manner according to:*

(a) the subject matter involved;
(b) the code of practice of the relevant funding body; and
(c) the code of ethics and procedures of the university.) (*Please*

put N/A where relevant)

3.1 Please tick to confirm that you are prepared to accept responsibility on behalf of the institution for your project in relation to the avoidance of plagiarism and fabrication of results.

✓

3.2 Please tick to confirm that you are prepared to accept responsibility on behalf of the institution for your project in relation to the observance of the rules for the exploitation of intellectual property.

✓

3.3 Please tick to confirm that you are prepared to accept responsibility on behalf of the institution for your project in relation to adherence to the university code of ethics.

✓

3.4 Will you give all staff and students involved in the project guidance on the ethical standards expected in the project in accordance with the university code of ethics?

Y

3.5 Will you take steps to ensure that all students and staff involved in the project will not be exposed to inappropriate situations when carrying out fieldwork?

N/A

3.6 Is the establishment of a research ethics committee required as part of your collaboration? (This is a requirement for some large-scale European Commission funded projects, for example.)

N

3.7 Does your research project involve human participants i.e. including all types of interviews, questionnaires, focus groups, records relating to humans, human tissue etc.?

Y

3.7.1 Will you take all necessary steps to obtain the voluntary and informed consent of the prospective participant(s) or, in the case of individual(s) not capable of giving informed consent, the permission of a legally authorised representative in accordance with applicable law?

Y

3.7.2 Will you take the necessary steps to find out the applicable law?

Y

3.7.3 Will you take the necessary steps to assure the anonymity of subjects, including in subsequent publications?

Y

3.7.4 Will you take appropriate action to ensure that the position under 3.7.1 – 3.7.3 are fully understood and acted on by staff or students connected with the project in accordance with the university ethics code of practice?

Y

3.13 Does your work involve animals? If yes you should specifically detail this in a submission to the Research Ethics Committee. The term animals shall be taken to include any vertebrate other than man.

3.13.1 Have you carefully considered alternatives to the use of animals in this project? If yes, give details.

N/A

3.13.2 Will you use techniques that involve any of the following: any experimental or scientific procedure applied to an animal which may have the effect of causing that animal pain, suffering, distress, or lasting harm? If yes, these must be separately identified.

N/A

Signature (student): Jay McNeil Date: 22/06/2015

Signature (supervisor): _____ Date: _____

N.B. Do not submit this form without completing and attaching the Stage 1 self-assessment form.

Thesis Research Protocol

Over the past decade a great deal of evidence has accrued concerning the poor mental health outcomes experienced by transgender people. These include higher rates of depression, anxiety, stress, self-harm and suicide than are found in the general population (e.g. McNeil, Bailey, Ellis, Morton & Regan, 2012; Bauer, Scheim, Pyne, Travers & Hammond, 2015). Although not as high, inflated rates have also been found in other minority groups, particularly among lesbian, gay and bisexual (LGB) people (Meyer, 2003).

One explanation which has received support in the field of LGB mental health is the minority stress hypothesis (Meyer, 1995, 2003). This suggests that simply by virtue of being in a minority group, people may experience poorer mental health outcomes, due to the *additional* stress that they experience over and above that experienced by people in majority positions. Meyer (2003) proposed three processes which explained this enhanced risk, which concerned overt discrimination, expectations of poor treatment, and the internalisation of negative societal messages. Furthermore, Meyer (2003) suggested that factors such as building a strong in-group identity and having appropriate support (such as from peers) could mitigate to some extent the impact of these experiences.

Although research has explored this hypothesis in LGB mental health (e.g. Burns, Kamen, Lehman & Beach, 2012), it is only beginning to be applied to trans mental health. Hendricks & Testa (2012) proposed an adapted Minority Stress model which could be applied to trans populations. This model incorporated trans specific experiences, including internalised transphobia, to explain the high suicide rates seen among trans people. In addition it conceptualised some positive and protective mechanisms which may prevent suicide such as forming supportive links with other trans people. Bockting, Miner, Swinburne Romine, Hamilton & Coleman (2013) tested the minority stress model as it pertained to trans groups.

They found that stigma was indeed associated with poor mental health, whilst peer support moderated this association. They concluded that the minority stress model was a useful method for conceptualising trans people's mental health. However, their measures were limited in their validity, and they recommended further exploration of these relationships. For example, they measured family support and peer support from other trans people, using a limited range of questions.

Aside from a need to use more robust ways of assessing support, family support may not be a factor that is common to many trans people's lived experiences and thus may not be a useful variable to understand in terms of thinking about enhancing mental health. Peer support may also be a useful avenue for exploring the role of social support; however it is also linked to the construct of in-group identity.

Instead, in this study the focus will be on functional social support, which Sherbourne and Stewart (1991) define as "the degree to which interpersonal relationships serve particular functions" (p.705). They specified those functions as emotional support, instrumental or tangible support, help to solve problems, support with self-appraisal and companionship.

Furthermore, Bockting et al. (2013) conducted their study with a US sample. It may be that there are differences in the type and availability of social support in other countries, such as the UK, where the provision of health services to trans communities are free at the point of delivery. This could mean for example that the support required is different, or has a different focus.

Therefore this study aims to further test the minority stress model in relation to trans people's mental health by:

- Measuring trans people's mental health.
- Establishing whether discrimination, expectations of poor treatment and/or internalised transphobia are related to trans people's mental health.

- Establishing whether such a relationship can be moderated by social support.

Method

Participants

Participants will be people who self-identify as transgender, and who are able to read and write English well enough to complete the survey. They will be recruited from the UK and other European countries via information disseminated by email and social media to trans groups, and in person to some organisations and support meetings (see Appendices One and Two). Only people 18 or over will be eligible to take part. Preliminary estimates based on the information given by Kenny (2015) indicate that between 300-350 participants will be necessary to detect a large effect size with 80% power.

Design

This study is a within-participants study. Participants will complete an online questionnaire (see Appendix Three), and the data from this will be used to test the minority stress hypothesis and to explore potential moderating variables. The predictor minority stress variables will be overt discrimination, anticipated or expected discrimination, and internalised transphobia. The outcome variables will be depression, anxiety and stress. The moderating variable will be social support, which is expected to moderate all of the predictor variables, according to the minority stress hypothesis.

Further variables will be included in the survey although will not form part of the moderation analysis. These are included to give context to the sample and consist of demographic variables (gender identity, relationship status, income, education, ethnicity, age), transition status, community identity and community related social support, self-esteem and gender dysphoria. These additional variables are important in understanding the diversity of the sample in terms of their experiences as trans people, and other factors

which may intersect in their lives. It will enable recognition of the representativeness of those who take part, and allow for acknowledgement of areas where others may have different outcomes.

There will also be some free-text boxes available for further comments from participants to provide any further information and to ensure that they feel their voices are heard in the data. Anonymised quotes from these may be used to highlight salient findings from the research or to provide context.

Materials

The predictor variables will be measured as follows:

- Discrimination will be measured using the Transgender Stigma Scale (Mizock & Mueser, 2014). This is a 27-item measure with three factors: discrimination, disclosure and positive aspects. The Discrimination sub-scale is the primary measure (alpha = .90).
- Anticipation/expectation of negative treatment will be measured using the 9-item Negative Expectation subscale of the Gender Minority Stress and Resilience Measure (alpha = .89; Testa, Habarth, Peta, Balsam & Bockting, 2015)
- Internalised transphobia will be measured using the 8-item internalised transphobia subscale of the Gender Minority Stress and Resilience Measure (alpha = .91; Testa, Habarth, Peta, Balsam & Bockting, 2015)

The outcome variables will be measured as follows:

- Depression Anxiety Stress Scales 21-item version (alpha depression subscale = 0.91, anxiety subscale = 0.84, stress subscale = 0.90; Lovibond & Lovibond, 1995).

The moderating variable will be measured as follows:

- Social Support will be measured using the 19-item Medical Outcomes Study Social Support Survey (MOS SSS; Sherbourne & Stewart, 1991). This produces four subscale scores for different aspects of social support, and an overall score. The overall score is the primary measure for use in the moderation (alpha = .97), although the subscale scores will also be calculated.

Other contextualising variables that will be recorded include:

- Gender identity
- Relationship status
- Income
- Education
- Ethnicity
- Disability
- Age
- Transition stage will be established by asking participants whether they have wanted to or have undergone a process of transition (yes/no), and then asking those who have what percentage of their transition has been completed.
- Community identity will be assessed by asking participants whether they feel that they are part of a 'trans community'. There will be a yes or no response to this.
- Community related social support will be evaluated by asking participants whether they can get support from other trans people about being trans. This will also have a binary response of yes or no.
- Level of dysphoria or dissatisfaction with gender identity and physical congruence will be assessed by asking participants the binary question of whether or not they experience this, and then asking those who do what percentage of their lives this interferes with.

- Self-esteem will be measured using the 10-item Rosenberg Self-Esteem inventory (alpha = 0.92; Rosenberg, 1965).

The psychometric measures above have been validated in other studies, and are either freely available, or held under licence by the university. The data collection will comprise of an online survey incorporating these measures (see Appendix Three) and designed using Qualtrics software.

Procedure

Information for participants (see Appendix One) will be disseminated to organisations working with trans people across the UK and in other European countries. Organisations outside the UK will be contacted via XXXX. This dissemination will be completed via multiple methods. A brief social media statement will also be shared with organisations to use on their social media sites (see Appendix Two). The participant information sheet will also be uploaded to the DClinPsy web pages and promoted through the DClinPsy twitter account. The more in-depth participant information (Appendix One) will be sent by email to organisations that represent or support trans people or other interested individuals, which is vital as a means of engaging trans communities. They may wish to advertise the research on their own web pages. One organisation holds a data base of over 600 participants from previous research with trans people, who wished to take part in further research. They will be sent this information as with other organisations, however they will also be specifically asked to send it out to those potential participants. This information will give brief details about the aims and scope of the study, and request that it is shared, in addition to contact details for the researcher and an offer of visiting the organisation to answer any questions potential participants may have, where time and available funds allow. There will also be a link to the online survey (see Appendix Three). Where necessary (i.e. if requested by organisations or if identified as a useful strategy for dissemination), visits to groups may take place to explain the research and alleviate

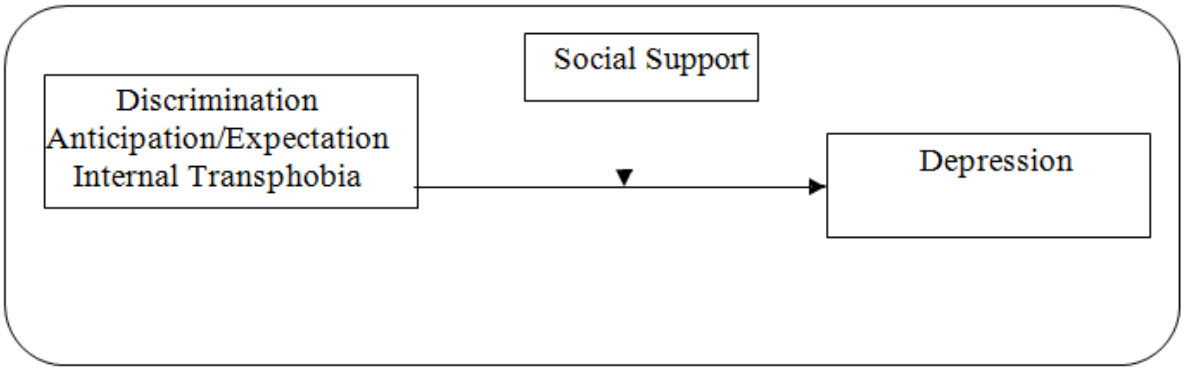
concerns that trans people may have about the use of their information. This has been an invaluable strategy in the past (e.g., McNeil et al., 2012). Key organisations to visit include the XXXXX. Where organisations request a visit which cannot be undertaken (due to financial, time or risk issues) a meeting by skype will be offered, or an online Q&A session.

When potential participants follow the survey link, they will access a survey welcome page which will again give them information and details about the purpose of the study, and what they might expect through taking part (see Appendix Four). They will be presented with contact details for the researcher, and explanations for how their data will be used and asked to confirm that they consent to this. If they do not consent, the survey will not continue and they will be directed to a thank you page (see Appendix Five). The participant materials and survey have been evaluated for acceptability by a national organisation working with trans communities. Once consent has been obtained, participants will be directed to the survey which should take approximately 30 minutes to complete. Following this they will then access a debriefing page (see Appendix Six).

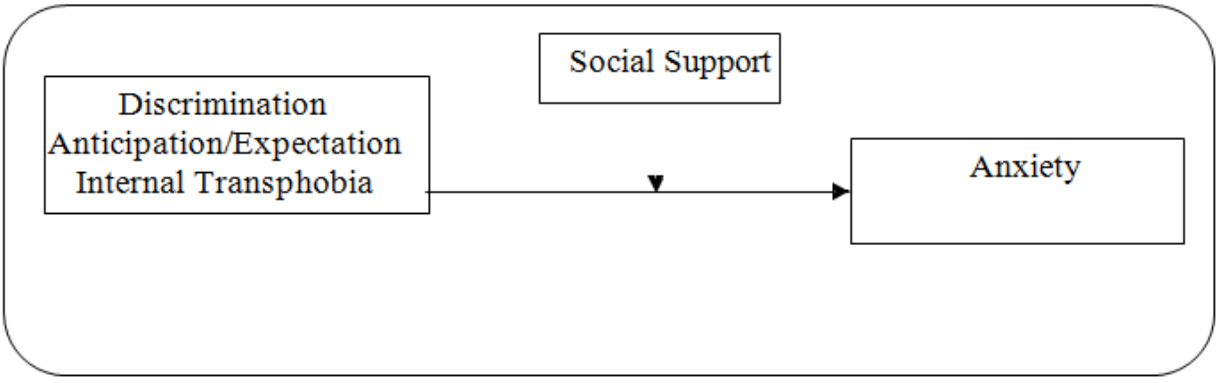
Proposed Analysis

Once downloaded, the data will be checked to ensure that there are no anomalies. It will be checked to ensure it meets any statistical assumptions required for analysis. Following from this, regressions will be undertaken, with subsequent moderation analyses. Three models will be tested as outlined below, to explore whether social support moderates each of the predictor variables in the different models.

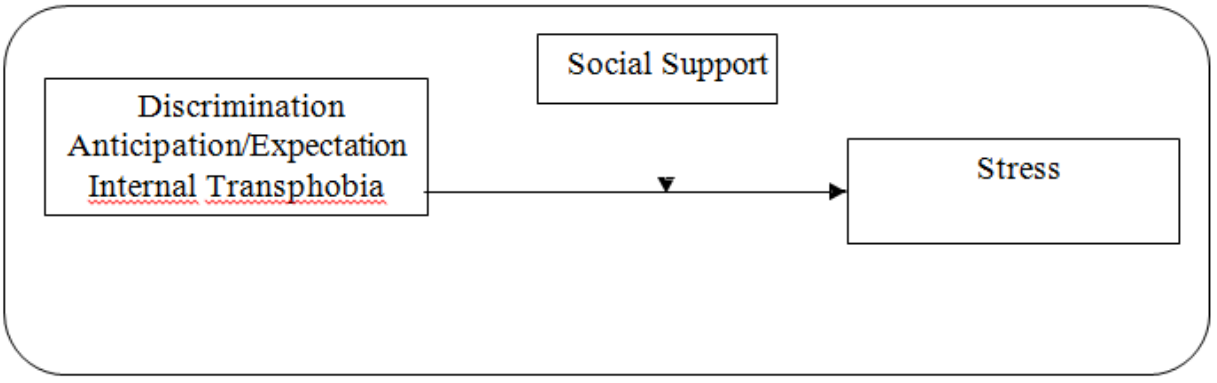
Model One:



Model Two:



Model Three:



Practical Issues

The participants will be offered no payment of any kind for taking part, as it is not expected that the study will lead to participant costs. There may be travel costs associated with the researcher attending support groups to disseminate information about the survey.

These will be costed and submitted to the research director of the DClinPsy programme for approval. No additional costs are associated with any of the measures used in the survey, or with the use of the online survey tool Qualtrics.

Ethics

As detailed above, the participants will be required to provide consent prior to taking part. The study consists of a questionnaire which participants can complete at a time which suits them. Although some of the items in the questionnaire are emotive, participants will be fully informed of this prior to taking part. They will be able to stop participation at any time, and will be provided with details of trans-positive support organisations should they need further assistance.

Timescale

June - August 2015: Ethical approval sought from FHMREC and the University REC

July - August 2015: Online survey prepared

August – Mid-September 2015: Data collection

Mid-September 2015– January 2016: Data analysis

December 2015 – February 2016: First draft

February – May 2016: Write-up of research

May 2016: Thesis submission

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Footnotes

[1] All material is included here for the purpose of viva examination; however some may be withheld from the final open access version due to issues of copyright or confidentiality.

Appendix A: Invitation Email with Participant Information

To Whom It May Concern,

"Transgender Mental Health: Testing the Minority Stress Model"

My name is Jay McNeil and I am currently doing the above research at Lancaster University, as part of my Clinical Psychology Doctorate.

This study explores the effect of discrimination and transphobia (from others and ourselves) on trans people's mental health. I am also looking at things that might help us to look after ourselves and our mental health, especially the social support that we have around us. It follows from the success of the Trans Mental Health Study in 2012, building on those findings to look at more ways of promoting good mental health for our communities.

The study involves completing an online survey, which should take around 30 minutes depending on how much information people want to give. The results will be anonymous so that people's identities will be protected. It is open to anyone who is 18 years old or over, has a good level of written and verbal English, and who self-identifies as trans in any way, or as having a trans history The more people who take part, the harder it is to ignore the results. So we need as many people as possible to complete the survey. Please share this

with anyone you know who might be interested in taking part. I have also attached a social media statement [Appendix Two] for release to your networks.

To find out more, follow the link below. There you will find more information about the study and the survey itself.

<<LINK>>

Should you have any questions please do not hesitate to contact me at j.mcneil@lancaster.ac.uk; +XXXX. If you run a group and think it would be useful for me to come and talk about the study or to answer any questions you may have, please contact me and we can discuss this in more detail.

Thanks in advance or your help.

Jay McNeil

Trainee Clinical Psychologist

About Me:

XXXXXXXXX

Appendix B: Social Media Statement

Following the success of XXXXX, a second research project is now underway. This study explores the effect of discrimination and transphobia on trans people's mental health. It also looks at some things that might help us to look after ourselves, such as social support. It is open to anyone who identifies in some way as trans or as having a trans history, who can read and write English well enough to answer the survey questions, and who is 18 or over.

The more people who take part the better, so it would be great if you could spend 20-30 minutes filling out this online survey. It would also help if you could share this with your contacts. For more information, or to take part, go to <INSERT LINK>

Jay McNeil

Appendix C: The Survey

Health & Medicine | Lancaster University

GLOSSARY OF TERMS

Trans or having a trans history: *We recognise that there are many different kinds of people who might be perceived to be trans or as having a trans history, and that there is no single term that everyone likes or self-identifies with. After a great deal of thought, we have mostly used the term 'trans' or the phrase 'being trans or having a trans history' in this survey to try to include anyone whose personal gender identity or gender expression is different to what is typically associated with the sex they were assigned at birth.*

Cisgender*: We have used this term for people who are not trans and do not have any trans history. That is, people whose gender identity and expression has always been typically associated with the sex they were assigned at birth.*

Gender Identity / Felt Gender*: We use this to refer to the gender (or genders) you feel that you are, regardless of what body you have. We recognise that some people identify as having no gender.*

We apologise if you do not like or identify with these terms. If you feel very strongly about these terms and would like to see different ones used in future, please leave comments at the end of the survey.

Some of the questionnaires used in this study have not been designed by us and we are not allowed to change the wording. We've tried to select those that will be acceptable to most people and hope that they do not cause any distress.

Discrimination

Subscale removed for reasons of copyright.

Internalised transphobia

Subscale removed for reasons of copyright.

Negative Expectations

Subscale removed for reasons of copyright.

Depression, Anxiety and Stress

DASS21

Please read each statement and click a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

1	I found it hard to wind down	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical	0	1	2	3
5	I found it difficult to work up the initiative to do things	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I experienced trembling (e.g., in the hands)	0	1	2	3
8	I felt that I was using a lot of nervous energy	0	1	2	3
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3

10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting agitated	0	1	2	3
12	I found it difficult to relax	0	1	2	3
13	I felt down-hearted and blue	0	1	2	3
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15	I felt I was close to panic	0	1	2	3
16	I was unable to become enthusiastic about anything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3
18	I felt that I was rather touchy	0	1	2	3
19	I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life was meaningless	0	1	2	3

Social Support

About how many close friends and close relatives do you have (people you feel at ease with and can talk to about what is on your mind)?

*Write in number of close friends and close relatives:*_____

Please click one option on each row to show how often each of the following kinds of support is available to you if you need it?

	None of the time	A little of the time	Some of the time	Most of the time	All of the time
Someone to help you if you were confined to					
Someone you can count on to listen to you					
Someone to give you advice about a					
Someone to take you to the doctor if you					
Someone who shows you love and					
Someone to have a good time with					
Someone to give you information in order to					

Someone to confide in or talk to about yourself or your problems					
Someone who hugs you					
Someone to get together with for					
Someone to prepare your meals if you were					
Someone whose advice you really want					
Someone to do things with to help you get					
Someone to help with daily chores if you were					
Someone to share your most private worries					
Someone to turn to for suggestions about					
Someone to do something enjoyable					
Someone who understands your					
Someone to love you and make you feel wanted					

About You

Is your current gender identity DIFFERENT from the gender which is typically associated with the sex you were assigned at birth?

- ○ Yes
- ○ Unsure
- ○ No

If you answered Yes or Unsure, please explain in what way it is different (if you wish to):

Which of the following best describes you?

- ○ I have a constant and clear gender identity as a woman
- ○ I have a constant and clear gender identity as a man
- ○ I have a constant and clear non-binary gender identity
- ○ I have a variable or fluid non-binary gender identity
- ○ I have no gender identity
- ○ I am unsure of my gender identity
- ○ Other (please specify):

Do you consider yourself to be within any of the following categories?
(*Please click all that apply)*

- ☐ Woman
- ☐ Man
- ☐ Woman with a transsexual history
- ☐ Man with a transsexual history
- ☐ Trans Woman
- ☐ Trans Man
- ☐ Trans Person
- ☐ Female-to-Male (FtM) spectrum person
- ☐ Male-to-Female (MtF) spectrum person
- ☐ Transgender person
- ☐ Crossdressing person
- ☐ Transvestite person
- ☐ Androgyne person
- ☐ Bi-gender person
- ☐ Gender neutral person
- ☐ Genderqueer person
- ☐ Neutrois Person
- ☐ Non-binary gender person
- ☐ Non-gendered person
- ☐ Intersex person
- ☐ Bissu
- ☐ Kathoey
- ☐ Khusra
- ☐ Kinnar
- ☐ Other, please specify:

Do you consider 'gender reassignment' or 'transition' to be relevant to you? (Any part of a personal, social, and sometimes medical or surgical, process by which you have changed the way you express your gender)

- ○ No, I have not undergone and do not propose to undergo any part of a process of gender reassignment or transition
- ○ Yes, I am **proposing** to undergo a process (or part of a process) of gender reassignment or transition
- ○ Yes, I am **currently undergoing** a process (or part of a process) of gender reassignment or transition
- ○ Yes, I have **undergone** a process (or part of a process) of gender reassignment or transition
- ○ Unsure
- ○ Other (please specify):

Do you feel your physical body wholly matches your gender identity?

- ○ Yes
- ○ No

If no, how dissatisfied or unhappy are you with this difference between your gender identity and your body? *(Please click the number which best represents how you feel)*

Not at all									Very much so
1	2	3	4	5	6	7	8	9	10

How important is it that others see you as the gender you identify as? *(Please click the number which best represents how you feel)*

Not at all important						Very important
1	2	3	4	5	6	7

Below are some terms that describe different sexual orientations and sexualities. Please click any which apply to you.

- ☐ Bisexual
- ☐ Gay
- ☐ Lesbian
- ☐ Asexual
- ☐ Pansexual
- ☐ BDSM/Kink
- ☐ Polyamorous
- ☐ Queer
- ☐ Straight or heterosexual
- ☐ Don't define
- ☐ Not sure or questioning
- ☐ Other, please specify:

What is your current relationship status?

- ○ Single and not seeking a relationship
- ○ Single and seeking a relationship
- ○ Celibate
- ○ In a monogamous (with one person) relationship
- ○ In a non-monogamous (open) relationship
- ○ In a polyamorous (multiple people) relationship, but only with one partner currently
- ○ In a polyamorous (multiple people) relationship, but with more than one partner currently
- ○ Other, please specify:

What is your age?

_____

Self-Esteem

	Strongly Agree	Agree	Disagree	Strongly Disagree
On the whole, I am satisfied with myself.				
At times, I think I am no good at all.				
I feel that I have a number of good qualities.				
I am able to do things as well as most other people.				
I feel I do not have much to be proud of.				
I certainly feel useless at times.				
I feel that I'm a person of worth, at least on an equal plane				
I wish I could have more respect for myself.				
All in all, I am inclined to feel that I am a failure.				
I take a positive attitude toward myself.				

What country do you live in? (please specify):

_____

What is your ethnic group?

White

- ○ English / Welsh / Scottish / Northern Irish / British
- ○ Irish
- ○ Gypsy or Irish Traveller
- ○ Any other White background, please specify: [ ]

Asian / Asian British

- ○ Indian
- ○ Pakistani
- ○ Bangladeshi
- ○ Chinese
- ○ Any other Asian background, please specify: [ ]

Black / African / Caribbean / Black British

- ○ African
- ○ Caribbean
- ○ Any other Black / African / Caribbean background, please specify: [ ]

Mixed / multiple ethnic groups

- ○ White and Black Caribbean
- ○ White and Black African
- ○ White and Asian

- ○ Any other Mixed / multiple ethnic background, please specify: [ ]

Other ethnic group

- ○ Arab
- ○ Any other ethnic group, please specify: [ ]

What is your religion or faith?

- ○ No religion
- ○ Any other religion, or combination of religions (please specify):

Do you currently experience any of the following? ***(Please click any which apply)***

- ☐ A learning difficulty (such as dyslexia)
- ☐ A learning disability
- ☐ Autism, Asperger's or neuro-diverse spectrum
- ☐ Mental health disability (including depression)
- ☐ A survivor of the psychiatric system
- ☐ Deaf
- ☐ Hearing impairment
- ☐ Blind
- ☐ Visual impairment
- ☐ Communication disability (use of augmentative or alternative communication)
- ☐ Physical or mobility disability
- ☐ Chronic pain
- ☐ Chronic illness
- ☐ None of the above

How is your health in general?

- ○ Very good
- ○ Good
- ○ Fair
- ○ Bad
- ○ Very bad

How would you describe your current work situation? ***(Please click any which apply)***

- ☐ Employed full time
- ☐ Employed part time
- ☐ Self-employed or freelance
- ☐ On a government sponsored training scheme
- ☐ Unemployed and seeking work
- ☐ Retired
- ☐ In further/higher education
- ☐ Looking after home or family
- ☐ On parental leave
- ☐ Temporarily laid off
- ☐ Permanently/long-term sick or disabled
- ☐ Unable to work because of short-term illness or injury
- ☐ Unable to work in the UK
- ☐ Other, please specify:

What is the highest level of qualifications you have?

- ○ No qualifications
- ○ GCSEs, Scottish Standard Grades or equivalent (e.g. Functional Skills, BTEC or NVQ Levels 1 or 2)
- ○ A-Levels, Scottish Highers or equivalent (e.g. International Baccalaureate, BTEC or NVQ Level 3)
- ○ Certificate of Higher Education or equivalent (e.g. BTEC Professional Award, HNC, NVQ Level 4)
- ○ Diploma of Higher Education or equivalent (e.g. HND, Foundation Degree, NVQ Level 5)
- ○ Bachelor's Degree or equivalent (e.g. Graduate Certificate/Diploma, PGCE)
- ○ Master's Degree or equivalent (e.g. Postgraduate Certificate/Diploma)
- ○ Doctoral Degree
- ○ Other, please specify:

What is your current personal income (prior to tax and other deductions)? For people who use other currencies (e.g. the Euro) please click other and enter your currency and amount.

- ○ 0 to £5,000 per year
- ○ £5,001 to £10,000 per year
- ○ £10,001 to £15,000 per year
- ○ £15,001 to £20,000 per year
- ○ £20,001 to £30,000 per year
- ○ £30,001 to £40,000 per year
- ○ £40,001 to £50,000 per year
- ○ £50,001 to £100,000 per year
- ○ £100,001 or more per year
- ○ Prefer not to say
- ○ Other amount: Please specify _____

Appendix D: Welcome page to the survey

Participant Information Sheet

Transgender Mental Health: Testing the Minority Stress Model

My name is Jay McNeil and I am conducting the above research as a student in the Clinical Psychology Doctorate programme at Lancaster University.

What is the study about?

In 2012 the Trans Mental Health study showed that trans people experienced very poor mental health. Many of the findings suggested that this might be partly because of the stress of being treated as different in society. **The purpose of this study is to explore whether there is a link between the experiences you might have as part of a minority group and mental health, and to see what might help reduce this**.

Who can take part?

Anyone age 18 or over, who can read or write English and who feels that their gender identity or expression is different to what is typically associated with the sex they were assigned at birth can take part. We've used the term 'trans' in this research to describe people who might feel like this. It's very difficult to find a term to use which everyone feels ok about, and we know that not everyone will identify with this word, but after a lot of thought we've used it because it's the term that *most* people feel comfortable using. If you

don't feel comfortable with this term, there is space in the survey for you to make comments, and it would be great to hear from you about what you'd like us to say in future.

Do I have to take part?

No, it's completely up to you to decide whether to take part or not. If you do decide to take part and change your mind whilst completing the survey you can stop at any time. Once you have submitted your responses however they will be anonymous and it will not be possible to know which answers are yours, so it will not be possible to remove them later.

What will I have to do if I take part?

If you want to be part of this study, you will be asked to fill out an online survey (by following the links below).This will be a series of questions about:

- **Who you are**
- **Any experiences of discrimination that you have had**
- **Any fears you may have of poor treatment**
- **How you feel about being trans or having a trans history**
- **Your self-esteem**
- **Support you might have around you**
- **How you feel about your gender**
- **Your mental health**

This should take about 20-30 minutes to complete so please allow plenty of time. Please try to answer the questions as honestly as possible. It is important that you are truthful about how you feel or what you believe. The data collected will be anonymous so no one will know who you are.

Will my data be confidential?

Yes. You won't be asked for your name or date of birth or anything that might make it easy to know who you are. The data you give will be stored securely and only the researchers and supervisors will have access to it.

- The survey will be produced using Qualtrics, and survey responses will be downloaded to a computer.
- The files on the computer will be encrypted (that is no-one other than the researcher and supervisors will be able to access them) and the computer itself password protected. These files will be kept for a period of 10 years.
- Only data which has been grouped together from many people will be reported. Once you have submitted your responses it will not be possible to identify your data.

There are boxes where you can write extra information if you want. Your words may be quoted in the research report, but any identifying details such as locations or names will be removed.

What will happen to the results?

The results will be summarised and reported as a doctoral thesis, and may be submitted for publication in academic or professional journals, for presentation at conferences, or for teaching or training purposes. A report will also be shared with trans community organisations so that as many people as possible can see the results.

Are there any risks?

It is not expected that you will experience any problems from taking part. However, the survey does ask about experiences which may have been difficult for you, and about your

mental health. If you find any of the questions difficult you can skip them, or stop taking part. Please do not continue if you find it distressing. If you experience any problems after taking part you are encouraged to inform the researcher and contact the support resources provided at the end of this sheet.

Are there any benefits to taking part?

Although you may find participating interesting, there are no direct benefits in taking part.

Who has reviewed the project?

This study has been reviewed by the Faculty of Health and Medicine Research Ethics Committee, and approved by the University Research Ethics Committee at Lancaster University.

Where can I obtain further information about the study if I need it?

If you have any questions about the study, please contact the main researcher:

Jay McNeil, Trainee Clinical Psychologist

XXXXXXXXXXXXXX

XXXXXXXXXXXXXX

Alternatively you can contact

the research supervisor:

XXXXXXXXXXXXXX

XXXXXXXXXXXXXX

XXXXXXXXXXXXXX

Complaints

If you wish to make a complaint or raise concerns about any aspect of this study and do not want to speak to the researcher, you can contact:

XXXXXXXXXXXXXXXXXXXXXXXXXXX

If you wish to speak to someone outside of the Clinical Psychology Doctorate Programme, you may also contact:

XXXXXXXXXXXXXXXXXXXXXXXXXXX

Thank you for taking the time to read this information sheet.

Resources in the event of distress

Should you feel distressed either as a result of taking part, or in the future, the following resources may be of assistance.

The Samaritans: 08457 909090 (UK)

jo@samaritans.org

MIND Infoline: 0300 123 3393

Website: www.mind.org.uk

If you need to find an organisation in an European country outwith the UK, some helpful groups can be located through XXXXX

Consent:

Transgender Mental Health: Testing the Minority Stress Model

The purpose of this study is to explore whether there is a link between the experiences you might have as part of a minority group and mental health, and to see what might help reduce this. If you wish to take part, please read the statements below and click each one to confirm that you agree with them. You will then be directed to the survey.

- o I confirm that I am 18 years old or over
- o I confirm that I have read the information sheet and fully understand what is expected of me within this study.
- o I confirm that I have had the opportunity to ask any questions by contacting the researcher, and to have them answered.
- o I understand that the anonymous data will be shared with the researcher's supervisors.
- o I understand that my participation is voluntary and that I am free to stop the survey at any time without giving any reason, without my legal rights being affected. I understand however that after I have entered my responses to this survey I will not be able to withdraw my data as it will be anonymous and the researcher will not be able to identify my responses.
- o I understand that my responses to the survey will be pooled with other participants' responses, anonymised and may be published.
- o I understand that the data from this study may be analysed again at a later date for further research.
- o I consent to information and quotations from my survey responses being used in research, reports, conferences, workshops, publications and training events.
- o I consent to take part in the above study.

Appendix E: Re-direction Page

Oops! It seems you did not agree to take part, you may not feel able to read/write English well enough to complete the survey, or that you might be under 18. Unfortunately this means you will not be able to continue. If you accidentally selected the wrong option, please feel free to go back and start the survey again.

Thank you for your interest in this project.

Jay

Appendix F: Debrief and Thank You Page

Thank you for taking part in this survey. Should you have any questions or concerns please do not hesitate to contact me at j.mcneil@lancaster.ac.uk, Tel: XXXXX.

Alternatively you can contact the research supervisor:

Dr Fiona Eccles

f.eccles@lancaster.ac.uk

+44 (0)1524 592807

Should you feel distressed either as a result of taking part, the following resources may be of assistance.

The Samaritans: 08457 909090 (UK)

jo@samaritans.org

MIND Infoline: 0300 123 3393

Website: www.mind.org.uk

Should you wish to gain further information or support, this can be obtained from a number of UK organisations, such as:

GIRES

TransBareAll

Gendered Intelligence

Useful resources include the following:

Top Tips For Working With Trans People - useful resource and brief guide to working positively with trans communities and individuals, designed for people working in statutory services.

Living My Life - positive booklet for people just coming out as trans.

Outside of the UK XXXXX have details of a number of organisations who can be contacted for support or information

Complaints

If you wish to make a complaint or raise concerns about any aspect of this study and do not want to speak to the researcher, you can contact:

XXXXX

If you wish to speak to someone outside of the Clinical Psychology Doctorate Programme, you may also contact:

XXXXX

Ethics Approval Letter

Research and Enterprise Services Division | Lancaster University

Applicant: Jay McNeil
Supervisor: Dr Fiona Eccles
Department: DHR
UREC Ref: RS2015/19

03 September 2015

Dear Jay,

Re: Transgender Mental Health: Testing the Minority Stress Model.

Thank you for submitting your research ethics application for the above project for review by the Faculty of Health and Medicine Research Ethics Committee (FHMREC). The application was recommended for approval by FHMREC, and on behalf of the Chair of the University Research Ethics Committee (UREC), I can confirm that approval has been granted for this research project.

As principal investigator your responsibilities include:

- ensuring that (where applicable) all the necessary legal and regulatory requirements in order to conduct the research are met, and the necessary licenses and approvals have been obtained;
- reporting any ethics-related issues that occur during the course of the research or arising from the research to the Research Ethics Officer (e.g. unforeseen ethical issues, complaints about the conduct of the research, adverse reactions such as extreme distress);
- submitting details of proposed substantive amendments to the protocol to the Research Ethics Officer for approval.

Please contact the Research Ethics Officer, Debbie Knight (01542 592605 ethics@lancaster.ac.uk) if you have any queries or require further information.

Yours sincerely,

S.C. Taylor

Sarah Taylor
Secretary, University Research Ethics Committee

Cc Fiona Aiken, University Secretary, Professor Roger Pickup (Chair, FHMREC); Prof Stephen Decent (Chair, UREC).

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